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SPATIAL CONSTRAINTS UPON THE EMPLOYMENT OPPORTUNITIES OF LOW INCOME PEOPLE IN EDMONTON

BY

JOSEPH MENSAH ©

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

DEPARTMENT OF GEOGRAPHY

EDMONTON, ALBERTA

FALL, 1993.

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IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

DR. R. G. IRONSIDE
(SUPERVISOR)

DR. D. B. JOHNSON

DR. A. K. FAIRBAIRN

DR. P. J. SMITH

DR. H. KRAHN

DR. D. G. JANELLE

Date: October 5th 1993

Abstract

Using the residents of Edmonton's Community Housing Programme, which is a subsidized rental accommodation, as a surrogate for the urban poor, the study explores the impact of spatial constraints upon the labour market activities of the city's poor. Specifically, the study examines whether or not increasing suburbanization in Edmonton has had a greater adverse effect on the central city low-income population than their suburban counterparts. The gender differences in job-related spatial constraints are also investigated.

The study results indicate that low-income respondents in central Edmonton had significantly severer job-related spatial constraints than their suburban counterparts. In addition, there was a statistically reliable gender difference in work trip distance and time. Female respondents travelled shorter distances to work than their male counterparts. The study concludes by developing the case for more low-income housing, child care facilities, educational and job-training programmes for the city's poor. The need for transportation restructuring and urban spatial restructuring in Edmonton is also brought forth. While the study does not purport to provide categorical explanations and solutions to the problems of urban poverty and unemployment, it offers significant insight into the nexus between spatial constraints and employment opportunities of the low income population in Edmonton.

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CHAPTER ONE

BACKGROUND OF THE STUDY

1.1 Introduction

In recent years, Canada's working poor have been marginalized by widespread plant shut-downs and blue-collar lay-offs. They have found a marked paucity of good career ladders, being stuck instead in dead-end, low-paying jobs. Faced with increasing government taxation, rising housing costs and the sense that families are no better off even though both spouses work, many Canadians are very pessimistic about their futures (Globe and Mail, December 29, 1990, A1).

Social analysts have generally adopted three, usually competing and sometimes overlapping, schools of thought in dealing with increasing levels of poverty and unemployment. Some think that the problem is caused by a flaccid welfare system which has created large groups of non-participants in the labour market. Others, probably a larger group, hold the view that the problem is due to cutbacks in government funding devoted to the welfare economy. A third group of analysts sees the mounting problems of poverty and unemployment as an inevitable structural component of the capitalist society (Offord 1991, Goldsmith and Blakely 1991).

Because of the complex nature of the problems of unemployment and poverty, the proliferation of explanations is understandable. The geographical literature from Kain (1968) and Harvey (1970) to the present has emphasized the need to

pay special attention to the spatial qualities of poverty and unemployment. The impact of space-related restrictions upon the employment opportunities of the poor has received considerable analytical attention in recent years (Kasarda 1989 and 1990, Hodge 1990, Goldsmith and Blakely 1991).

Some influential geographers (Harvey 1970, 1972, 1973; Wheeler 1974) have long demonstrated that **space** is not merely a medium in which society operates to generate social inequality. These geographers argued that differences in the interconnection between homes and jobs create patterns of constraints, which in turn generate differences in the incidence of poverty and unemployment. According to Harvey (1972, 1), **space** is not a mute variable to the unfolding of social and economic problems. Indeed, the mere fact that spatial separation needs to be dealt with if socio-economic activity is to proceed attests to this fact.

Though "the recognition that differential physical access to employment opportunities impacts the life chances of individuals is almost a truism in geography" (Hodge 1990, 92), very few Canadian geographers have actually addressed the issue of spatial constraints upon the employment opportunities of the urban poor. The geography of poverty has received only perfunctory and peripheral attention in Canada. As Taylor pointed out: "Geographers (in Canada) have tended to avoid the poor" (Taylor 1983, 2).

Employment and population suburbanization in many

Canadian cities, including Edmonton, have been occurring for some time now. High income families seeking less congestion, safer neighbourhoods, and better amenities are increasingly leaving the central cities (Yeates 1990). Companies, particularly in manufacturing and retail trades, have been drawn to the suburbs by homologous advantages: cheaper land, superior environment, improved transport access, and wealthier customers (Yeates 1990). The tremendous telecommunication innovations in recent years--faxes and electronically linked computers--have increased the suburbanization process. Remaining in most inner cities are high-skilled jobs and low-skilled workers (Yeates 1990). This phenomenon of demand of jobs with high skills and the supply of workers with low skills is called "**the spatial mismatch hypothesis**" in the geographic literature (Ellwood 1986, 149; Bourne 1989, 314; Leonard 1987, 325; Holloway 1990, 324).

The spatial mismatch has had a particularly deleterious effect on the low-income people left behind in the inner city. Difficulties of travelling to jobs may impose time and monetary costs on the poor, high enough to discourage them from participating fully in the labour market. The job search process of the poor tends to rely on informal networks which dissipate with distance (Ellwood 1986, 156). Low income people, therefore, may have less information about job opportunities distant from their places of residence.

Furthermore, reliable vehicles are rarely available for

this group of people. In the words of Kasarda (1983a, 46): "They [the poor] can afford neither the luxury nor the employment necessity of owning an automobile." In this context, the geography of public transportation networks and the frequency of transit service are very relevant. Compounding the problem is the fact that most poor people in metropolitan areas (albeit to a lesser extent in Canada) live in neighbourhoods where they fear for their personal safety once they leave their homes (Ellwood 1986, 156).

Using Edmonton as a case study area, the present study investigates the impact of spatial constraints on the employment opportunities of the urban poor. For the purposes of the study, Edmontonians living in subsidized rental accommodations under the Community Housing Programme (operated by the Edmonton Housing Authority) are considered "low-income people" or "poor". The justification for the selection of this subsidized housing programme for the study is provided in due course.

The term **Spatial Constraints** is used in the study to imply the limitations engendered by the organization of space and how space is implicated in socio-economic and physical processes (Gregory 1981, 322). The interpretation given to the concepts of space and spatial constraints throughout this study is based on the assumption that spatiality is inseparable from social processes. Regarding the urban labour market, **Spatial Constraints** are seen as the difficulties

relating to journey-to-work and job search, access to reliable personal or public transportation, access to job information or manpower centres, and the ability to travel at all times in all parts of the city without the fear of compromising personal safety.

The notion of **Employment Opportunities** is used in a composite manner. It denotes a combination of circumstances that enhance a person's chance of undertaking activities tied to labour market. These 'favourable' circumstances include job availability, appropriate educational qualifications and skills, good health and a reasonable wage. The impact of space-related restrictions on these otherwise favourable conditions is referred to as **"The Spatial Constraints on Employment Opportunities".**

The study relies on a primary data set collected by a survey. Secondary data from a variety of sources--including the City of Edmonton Transportation Department, The Planning and Development Department, The Edmonton Economic Development Authority, The Edmonton Social Planning Council, and Alberta Family and Social Services--are utilized to strengthen the empirical basis of the study. The study seeks to provide insight into a fundamental structural hurdle facing the poor in the labour market, and to be an aid to the planning and implementation of anti-poverty programmes. The study draws attention to the self-evident, but often overlooked fact that spatial constraints are strong barriers to the employment

activities of the poor. The urban labour market and the straitened circumstances of the poor can be improved upon with some knowledge of who works where and why.

1.2 The study plan

Eight chapters follow. The next, Chapter 2, deals with the conceptual framework of the study. Theories of poverty are presented together with a discussion on the nexus between the urban transformation and urban poverty. In addition, relevant prior studies are reviewed; and the concepts of "space", "spatial constraints", and "employment opportunity" are examined in detail. Chapter 3 examines the research objectives, related hypotheses and key variables. Chapter 4 provides background information on the study area (Edmonton) and discusses the main trends occurring in its labour market. The nature of poverty in Edmonton is unravelled as well. Chapter 5, **Methodology**, examines the study questionnaire, the sampling techniques and the representativeness of the sample. Chapter 6 provides a descriptive overview of the survey respondents.

The heart of the study lies in Chapter 7 where the significant relationships are established, and the research hypotheses tested. Chapter 8, **Policy implications**, draws out the policy implications of the study. The final chapter, **Summary and Conclusions**, sums up the previous chapters and highlights the main research conclusions. Suggestions about future research issues in the field are put forward as well.

CHAPTER TWO

THEORETICAL FRAMEWORK

2.1 Definitions of Poverty

Poverty, a self-evident phenomenon of everyday life, is hard to grasp in a scientifically manageable way. Very few areas of the social sciences are as contentious as the study of poverty. The concept of poverty typically involves both relative and absolute notions. An absolute definition specifies some level of purchasing power per person or family that is considered sufficient to buy a minimum of life's necessities or basic needs. Households with incomes below that level are classified as living in poverty (Heilbrun and McGuire 1987, 239).

A relative definition, on the other hand, is based on the belief that poverty is not just the particular problem of a limited and defined section of society, but is integrally related to conditions in society as a whole. The relative conception classifies households as living in poverty if their incomes fall below some fraction of the national median or mean. Philosophically, from an absolute point of view, poverty could be eliminated. If it is defined relatively, then this could never be the case.

Unlike the United States, Canada has no "official" definition of poverty. Different agencies including Statistics Canada, the Canadian Council on Social Development, and

provincial social service agencies measure poverty differently (Ross and Shillington 1989, 7). Like all operational definitions, none of the measurements offered by these agencies is exhaustive.

The most widely used Canadian poverty line is the "low-income cut-offs" which Statistics Canada employs to produce data on low-income families (National Council of Welfare 1989, 1). Statistics Canada itself does not claim to measure poverty, rather it purports to define a set of income levels below which people may be living in "straitened circumstances" (Ross and Shillington 1989, 7). A Statistics Canada survey of family expenditure in 1959 found that the average Canadian family spent approximately half of its income on food, shelter and clothing. A family that spent "significantly more" than half of its income on these essentials was designated as living in "straitened circumstances". Statistics Canada adopted 70% of income as the cut-off point (or as its definition of "significantly more").

In calculating its poverty line, Statistics Canada now begins by estimating the percentage of gross family income spent on food, shelter and clothing, and then marks this percentage up, somewhat arbitrarily, by 20% to get the low-income cut-off point (Ross and Shillington 1989, 7). In addition, Statistics Canada varies its low-income cut-off on the basis of size of family and the place of residence. The larger the place of residence, in population, the higher the

low-income cut-off line for any family size. Table 1.1 shows the Statistics Canada's low income cutoff for Edmonton in 1990. As can be seen, the cutoff line increases with household size.

2.2 Theories of Poverty

There are two main competing theories of poverty. These theories either focus on the behaviour of the individual (the Individualistic Explanation) or on the basic structure of society (the Structuralist Explanation).

Table 1.1: STATISTICS CANADA'S 1990 LOW INCOME CUTOFF FOR EDMONTON (CITIES WITH A POPULATION OF 500,000 AND OVER)

Household size	Low income cutoff ($)
1	14,160
2	19,193
3	24,396
4	28,090
5	30,690
6	33,313

Source: Edmonton Food Policy Council (1991, 13).

2.2.1 The Individualistic Explanation of Poverty

This mode of explanation blames the poor for their poverty. It sees poverty as a personal pathology, a consequence of psychological and motivational inadequacies on the part of the impoverished. The theory is persistently

nurtured by intense competition and materialistic proclivities in society. This view of poverty is epitomized by the work of Oscar Lewis (1966) who coined and popularized the notion of "Culture of Poverty". According to Lewis, poverty is a subculture in Western societies, and it is a way of life handed down from one generation to another. Lewis argued that by the time children living in the "Culture of Poverty" reach the age of five or six, they have usually acquired the basic attitudes and values of the subculture. They, therefore, become psychologically unready to fully participate in "mainstream" society.

Other writers, particularly Social Darwinists, invoke similar ideas which according to Goldsmith and Blakely (1991, 3), are poorly disguised expressions of racism, sexism and individualism. Some writers argue that some races are poor because they are inherently ignorant and lazy (Betton 1973). In the words of Graham Riches: "To believe for example that Indian people, Blacks and immigrants are responsible for their own poverty not only blames the victims, but is racist and deeply offensive" (Transition, June, 1991, 12).

Policy-makers who sympathize with the individualistic explanation of poverty usually insist that since the poor are the cause of their own misfortune, the assumption of greater social responsibility will worsen the problem by encouraging further dependency. Indeed such arguments serve to disconnect the plight of the poor not only from the responsibilities of

society, but also from the impediments of their straitened circumstances.

Since the majority of Canada's poor are women and children and most poor families have at least one member who holds a job (Ross and Shillington 1989), the individualistic explanation is not very convincing (Transition, June, 1991, 12). It is estimated that about half of the people receiving social allowance in Alberta are children, and approximately 70% of all social allowance recipients are either sole parents, elderly citizens, persons with disabilities, or are unsuited for employment (Edmonton Social Planning Council 1991).

The concept of "Culture of Poverty" has been seriously undermined by some formal studies and critiques (Pahl 1975, Wilson and Aponte 1985, Wilson 1987). Pahl (1975) argues that if the "Culture of Poverty" refers to those cultural practices which keep people poor, then it should embrace the activities of the rich which deliberately, or otherwise, keep others poor. Critics argue that the notion of "Culture of Poverty" places blame on the victims and therefore conceals the social causes of poverty. It leads to social policies that focus on changing the attitude and behaviour of the poor rather than making structural changes in society. Wilson and Aponte (1985) insist that the behaviour of the poor normally results from external economic and social forces rather than internal psychological values.

2.2.2 The Structural Explanation of Poverty

Rather than locating the cause of poverty in the poor themselves, the structuralists attribute poverty to external social and economic forces such as lack of job opportunities and low wages. This mode of explanation was particularly popular during the 1930s when the opulence and optimism of the previous decade in most developed countries vanished due to the great depression. There was massive unemployment, insecurity and poverty; people began to offer the structural explanation of poverty.

In recent years, Neo-Marxist geographers like Richard Peet and David Harvey have echoed the structuralist mode of explanation. They argue that poverty is neither a surprising paradox nor a temporary aberration of the market system (Peet 1975, 564). According to them, poverty is inevitably produced by Capitalism and its attendant exploitation of labour. They insist that the Capitalist system produces a group of people (the industrial reserve army) who are marginalized by the market system, pushed aside when they are not needed, and employed at a very low wage when they are. In their view, poverty cannot be eliminated without the abolition of Capitalism. It should be recognized, however, that regardless of the form a society takes--Capitalism or Socialism--inequality and poverty would be present, at least, to some degree, especially if poverty is presented as a relative concept.

Presently, about 14% of social assistance cases in Alberta are families headed by persons who are employed at or near the minimum wage. While many of the poor are working, they just do not make enough. The current wage structure in Alberta is such that working 40 hours a week at the minimum wage of $5.00/hour yields a gross annual income of $9,600. This is $4,560 less than the 1990 Statistics Canada low-income cut-off of $14,160 for a single person living in cities with a population of 500,000 and over.

The problems of the poor are now exacerbated by the continuing globalization of the Canadian economy. Canada is now much more integrated through trade into the global economy, with key 'powerful' nations--the United States, Japan, and Western European countries--participating indirectly in the domestic economy. One consequence of this integration is the shift of capital investment off-shore, to provide low income, low-skilled jobs in other countries to which Canadian workers do not have access. In addition, successful Canadian citizens are rapidly moving to distance themselves from the poor, not only in obvious social and economic terms, but also geographically, as we shall see in the next section of the discussion.

Despite the strength of the structuralist explanation of poverty as expressed in political ideologies and economic theories, the sociological and anthropological analyses underlying the individualistic explanation of poverty cannot

be dismissed. Both arguments can be used to interpret the incidence and persistence of poverty in society.

2.3 Urban Spatial Changes and the Urban Poor

Fuelled by an interwoven interaction of socio-economic and geographic forces, the demographic and employment landscapes of major North American cities are undergoing considerable transformation (Bourne 1987 and 1989, Le Bourdais and Beaudry 1988). In many instances, the loci of residential and employment growth are shifting away from inner cities to their suburban and exurban areas (Yeates 1990).

The urban transformation has had especially devastating impact on the low-income population left behind in the inner city (Kasarda 1983a, 45-46). Unfortunately, prospects for improving the residential arrangements and employment opportunities of the urban poor in many cities are not good. Recent trajectories, if followed, will only exacerbate the situation for the impoverished population, especially those living in high poverty neighbourhoods (Bourne 1991).

Urban policies by municipalities and national governments, in the view of Kasarda (1980, 373), have been at best marginally successful, and in most cases counterproductive, inadvertently creating externalities that have worsened the problems of the urban poor. Some analysts believe that the reason for this lack of success rests with the failure to give adequate attention to contemporary technological, economic and social dynamics underlying the

locational decisions of people and firms (Kasarda 1980, 373; Ley 1984, 242; Goldsmith and Blakely 1991, 136).

The following theoretical discourse aims to highlight the major structural transformations occurring in Canadian cities with a view towards assessing the attendant impact on the urban poor. The discussion draws, primarily, on the results of urban research in Canada on such related topics as: urban spatial structure, suburbanization, changing employment structure, journey-to-work, changing residential structure, and inner city gentrification (Ley 1988, Gad 1985, Bourne 1987 and 1989, Filion 1987, Villeneuve and Rose 1988, Simmons 1991). Relevant literature on similar issues from other countries, particularly the United States, will be considered as well.

The review places greater emphasis on the Canadian city situation as distinct from the American city, not only because the study area is in Canada, but more importantly, because there are some striking differences between urban centres in Canada and the United States (Edmonston, Goldberg and Mercer 1985, 201). For instance, it has been shown that Canadian cities have on the average greater residential densities, lower proportions of single family housing and younger housing stock than cities in the United States (Edmonston, Goldberg and Mercer 1985, 210). In addition, there are about four times as many miles of urban expressway for each metropolitan resident in the United States as there are in Canada; and

American metropolitan commuters use the automobile in the journey-to-work almost four-fifths of the time, compared with 65% in Canada (Edmonston, Goldberg and Mercer 1985, 210). Also, there are no large inner city racial ghettos in Canada compared with those in American cities. Given these differences, caution must be exercised in undertaking theoretical generalizations regarding the North American city.

2.3.1 Suburbanization of Population and Employment

The development of the Canadian city has been characterized by changes in the location and composition of economic activities, including an extensive suburbanization of population and employment (Gad 1985, 331). For the most part, this employment consists of manufacturing, wholesale, and retail and other blue-collar jobs that normally require larger space-per-employee ratios are increasingly moving to the suburbs (Yeates 1990, Broadway 1992).

The availability of relatively inexpensive land for employees' parking, freight transfer, and automated single-storey production and distribution facilities, and excellent accessibility to markets via interconnection of freeways have facilitated the suburbanization of employment (Yeates 1990). Despite some evidence of gentrification (Ley 1988), there is an increasing 'flight' of middle and upper class families to suburban areas (Bourne 1991).

The counterpart of this suburban movement is that of businesses and institutions offering highly specialized goods

and services--financial institutions, legal firms, consulting firms, advertising agencies, luxury goods shops, accounting and professional complexes--being attracted to the inner cities (Broadway 1992). The specialized nature of these "knowledge-class jobs" (Kasarda 1983a, 43), often makes it worthwhile to locate at centralized nodes that maximize accessibility to people and firms in the city.

Though population and employment suburbanization in major Canadian cities have been going on for some time now, they have been augmented in recent years due to the computer revolution and telecommunication innovations. In his study of the 27 largest Canadian centres, Bourne found that: "All urban areas in Canada have undergone inner area population decline and overall spatial deconcentration" (Bourne 1989, 318). A similar observation was made by Le Bourdais and Beaudry (1988, 112) who indicated that as they go through post-industrial transition, Canadian urban centres experience progressive movement of people toward suburban and exurban areas.

The inner city poor are at a labour market disadvantage because of the dual forces of urban population and industrial decentralization and the growth of advanced services in the inner cities (Simmons 1991). Occupations in which blue-collar workers have traditionally found the greatest employment opportunities have witnessed precipitous decline and spatial decentralization in most Canadian cities (Broadway 1992). The concomitant rise in advanced "knowledge-class jobs" in inner

cities has left a rising disparity between the qualifications of inner city dwellers and the types of jobs available to them (Gad 1985, Le Bourdais and Beaudry 1988, Simmons 1991).

The bulk of the "knowledge-class jobs" which have replaced manufacturing in the inner cities (as the name implies), require employees who are able to work with words and numbers. However, the urban poor, as a group, are usually very poorly educated (Edmonton Food Policy Council 1991, Broadway 1992). In addition, structural changes in the manufacturing sector itself--improvements in technology which require fewer workers per unit of production--have equally worsened the employment chances of the urban poor (Goldsmith and Blakely 1991).

Furthermore, the service industry, including a diverse range of private and public activities, is growing rapidly, replacing much of manufacturing's share of total employment (Broadway 1992). The labour-pool/job opportunity mismatch has generated a great deal of controversy in the geographic literature, as we shall see below.

2.3.2 Consequences for the Urban Poor

The movement of jobs towards the suburbs and the differential suburbanization of socio-economic groups have altered the composition of urban labour markets. A noteworthy consequence of this spatial transformation is increased commuting in both directions between central cities and suburban areas (Bourne 1989, Yeates 1990).

The most deleterious consequence of this job opportunity-residential composition mismatch, however, has been felt by the urban poor. As blue-collar industries become more and more dispersed among suburban and exurban areas, they make public transportation from inner cities to many job sites impractical. The greater distances between homes and workplaces have reduced the extent to which walking and cycling, relative to motorized transportation modes, can be used (White 1983, 177). Also, the fact that reliable vehicles are particularly unavailable to the poor, aggravates the problem.

There are other factors that make the suburban labour market dysfunctional in meeting the needs of the urban poor. The working poor often depend on second jobs to supplement household income. Such employment normally involves additional job-search and commuting. In a situation where employment locations are widely dispersed, the likelihood of obtaining a second job within easy reach of the residence is restricted. Commuting between two jobs located in such widely spaced areas becomes very demanding. Moreover, public transportation networks in most suburban areas are either poor or completely non-existent (Bourne 1991, Yeates 1990).

Unlike the poor, the spouses and children of well-off executives and professionals are likely to have access to private automobiles and labour market information which is often relayed via word-of-mouth. Members of middle and upper

class families are also in a better position to tolerate lower pay, since their families as a whole enjoy higher levels of income.

Furthermore, under conditions of a rapidly expanding urban landscape, a wide variation of wages, employment benefits and access to labour market information is to be expected. The inner city poor may have no way of determining whether or not worthwhile jobs are available in the suburbs, and should they decide to search whether or not they are getting the appropriate employment deals in wages and benefits (Stanback and Knight 1976, 167).

2.4 The Journey-to-work: What Gender Engenders

Gender has emerged as a critical dimension in the literature on space-related constraints upon employment activities (Villeneuve and Rose 1988, Rutherford and Wekerle 1988, Dyck 1989). In part the interest stems from issues relating to fair access for female workers, and in part from the need for better understanding of the impact of gender roles on society (Hodge 1990, 94).

The hypothesis that 'female' commuting distances are shorter than 'male' distances is confirmed by several studies (Madden 1981, Hanson and Johnston 1985, Hanson and Pratt 1990). The consistency of these findings has prompted a search for explanations into the spatial 'entrapment' of women in the urban labour market (McLafferty and Preston 1991). Why do differences exist in male and female journey to work patterns?

Although explanations vary among researchers, the unifying argument is that women face several constraints that restrict their geographic mobility in the urban labour market: household and child care responsibilities, income and occupational constraints, and limited access to a reliable automobile (Gorden et al 1989).

Several analysts agree that household responsibilities are a significant factor structuring the female commuting behaviour (Villeneuve and Rose 1988, Dyck 1990, Dubin 1991). It is reasoned that the age and number of children in a household affect not only the probability of a woman entering paid employment, and whether she works part-time or full-time, but also the time and money she can afford to spend on the journey to work (Rutherford and Wekerle 1988, Dyck 1990).

Despite its intuitive appeal, this explanation does not hold up well under empirical scrutiny (McLafferty and Preston 1991, 2). In their analysis of a Baltimore travel survey data set, Hanson and Johnston (1985) found that women's household activities do not explain their shorter work trips. The presence or absence of children and children's ages did not affect women's work trip length in any significant manner. Similarly, Gordon et al (1989) concluded that the presence of children accounted for very little of the differences in commuting. "It is difficult to agree that domestic responsibilities induce women to consider a narrower spatial range of jobs with the risk of lower wages and/or inferior

working terms and conditions" (Gordon et al 1989, 502).

A related explanation concerns the structuring effects of residential location choice (or constraints). Evidence suggest that because of the secondary status of women in a typical two-parent household, residential location decisions are made by placing emphasis on the male's workplace, with the female's job search then constrained (Singell and Lillydahl 1986, 126; Dubin 1991, 27). Moreover, "patriarchal relations within the family mean that men generally have access to the automobile, leaving women to rely on slower, less flexible public transportation" (Rutherford and Wekerle 1988, 118).

Empirical evidence on the link between gender and the use of public transportation to work is also mixed. Contrary to findings in other studies (Hanson and Hanson 1981, Hanson and Johnston 1985), Gordon et al (1989) and Hanson and Pratt (1990) found no significant gender difference between men and women in public transit use. Thus, we cannot count on the gender differences in mode of transportation to explain disparities in commuting times without reservation (Hanson and Pratt 1990, 386).

Other analysts have suggested that women may work closer to home because their lower pay implies they cannot afford a longer journey to work (Hecht 1974, Madden 1981). It is argued that women's shorter work trips are a rational response to the lack of well-paid employment opportunities for them (McLafferty and Preston 1991, 3). The observed relationship

between income and journey to work is, however, not that straightforward. The spatial mismatch hypothesis suggests that poorly paid workers have to incur longer commuting trips or face more severe unemployment because of the geographic mismatch between the distribution of low-paid jobs and the residential location of the urban poor (Gordon et al 1989).

Some analysts believe that women's shorter work trips reflect the fact that women have different types of jobs compared with men (Cubukgil and Miller 1982). Empirical support for this line of thinking is also inconclusive (McLafferty and Preston 1991, 3). Gordon et al (1989) found that women consistently have shorter work trips than men irrespective of employment type. It cannot be concluded, therefore, that women have shorter work trips because of their heavy representation in poorly paid jobs (Gordon et al. 1989).

The only conclusion that can be distilled from the preceding review is that nothing is decisive in the available literature. In several instances, the most obvious statement has given rise to contradictions when subjected to empirical scrutiny. The simplest questions one can ask about the relationships between gender and journey to work drive home to us the prevalence of mixed findings in the literature. The need for more research is obvious. To what extent does the well-known shortness of women's work trips hold in the exclusive case of the urban poor? Why should we expect the relationship between gender and journey to work to be

different amongst the low income population?

There are some important differences between the experience of low income women and men in the labour market, and these, in turn, should affect their respective work trip and job search characteristics. Low income women are more likely to be single parents than low income men (Canadian Advisory Board on the Status of Women 1990). In Alberta, it is estimated that more than one-third of the total Social Allowance caseload is made up of single parent families, of which 96% are headed by women (Alberta Family and Social Services, Annual Report 1988-89). The effects of single-parenthood on commuting behaviour are not well understood. Conventional wisdom suggests that single parents should be more sensitive to job-related spatial constraints than married parents. The demands of home and children restrain the commuting time of single parents. Gordon et al (1989, 508) found that married workers undertake longer work trips than either single or divorced workers. Nevertheless one can argue that as sole wage-earners, single parents may be compelled to endure longer journey to work distances to find good-paying jobs (McLafferty and Preston 1991).

Furthermore, because women have greater representation in the low income population, absolutely and relatively (National Council of Welfare 1989, Ross and Shillington 1989), and given that income levels relate to commuting behaviour (Hecht 1974, Rutherford and Wekerle 1987), we can expect disparities

in the journey to work characteristics between poor men and poor women which may not be the case among men and women in general.

Though very little is known about the use of personal contacts among low income men and women in obtaining jobs, there is some indication that women and men use different sources of information to seek and find work (Hanson and Pratt 1990). This in turn should influence the gender-based disparities in job search patterns. Against the background of these differences and the mixed findings in the available literature, we need to investigate the gender-based disparities in journey to work and job search characteristics of the urban poor before we can fully understand the role of space in generating poverty and unemployment between the sexes.

2.5 Spatial Constraints and Employment: Previous Studies

Because of the cumulative nature of science, an account of prior research forms a necessary condition for orderly building of knowledge (Cooper 1989, 11). In what follows, a review of the relevant research literature is undertaken to identify the perspectives, goals, techniques and findings of other scholars in the field.

There has been an ebb and flow in the study of space-related constraints upon employment opportunities. Attempts to trace the origins of the field have actually suffered from both an overemphasis on specific studies and a desire to

impose too much order upon a diverse literature. However, some consensus does emerge as to those sources regarded as influential.

In the May 1968 issue of the Quarterly Journal of Economics, John F. Kain of Harvard University published a pioneering article on spatial constraints on the employment activities of blacks in Detroit and Chicago. Many analysts (Mooney 1969, 209; Ellwood 1986, 149; Leonard 1987, 325) acknowledge that this is the first formal research into the **Spatial Mismatch Hypothesis.** Kain tested three related hypotheses: First, residential segregation affects the geographic distribution of black employment; second, residential segregation increases black unemployment; and third, the postwar suburbanization of employment has hindered black employment (Kain 1968, 176).

Using the statistical tool of multiple regression, Kain examined the relationship between blacks' share of total employment (dependent variable) and several independent variables representing the factors causing blacks to be underemployed in distant workplaces. He found that residential segregation caused employment segregation. Kain suggested that there would be more employment for blacks if neighbourhoods were desegregated.

Several scholars have appraised, disputed, and extended Kain's findings using a variety of techniques. In 1969 Joseph Mooney undertook a similar study using data on the 25 largest

Standard Metropolitan Statistical Areas (SMSAs) in the United States. Mooney's results supported those of Kain. Mooney noted that geographic separation of inner city blacks from burgeoning jobs in the fringe areas reduced their employment opportunities (Mooney 1969, 309).

Stanley Masters of the University of Notre Dame has offered a critique of Kain's work. Masters (1974) argued that jobs are easier to find in the central city, and that suburbanization of employment may be a response to labour market conditions rather than a cause of unemployment. Kain (1974) responded to this criticism effectively by arguing that:

> If there is a greater demand for labour and higher wages at central city than in the suburbs, white workers may move to convenient central city neighbourhoods and accept these jobs with no transportation cost penalty...In contrast, if jobs are more plentiful and higher paying in the suburbs, black workers, in general, can hold them only by accepting large travel costs (Kain 1974, 514).

In another influential paper, David Ellwood of the John F. Kennedy School of Government (Harvard University) concluded that job proximity had little impact on the extent to which black youths in Chicago participated in the labour market. He summed up this basic finding in the form of an aphorism: "**Race not space** remains the major explanatory factor [for blacks' poor labour force participation]" (Ellwood 1986, 149). Ellwood arrived at this finding after analyzing the employment characteristics of black and white out-of-school youths aged 16-21 in Chicago in 1970. He also compared the employment

rates of blacks in two different neighbourhoods--West and South side ghettos--which, according to him, had different degrees of job accessibility for black youths. In a recent critique of Ellwood's paper, Kasarda remarked that:

> While there is no question that race, including outright discrimination, plays a potent role in the relatively poor employment performance of blacks, one should be cautious in using the Ellwood study to dismiss space as a contributing factor (Kasarda 1989, 36-37).

Kasarda (1989) noted that, data for Chicago's West and South side ghettoes in 1970 suggest that their labour markets were not different, at least with regard to job proximity for black youths. This is contrary to Ellwood's claim.

In addition, Ellwood found that 79.4% of white out-of-school youths were employed in 1970 compared with a modest 54.3% of black youths. Kasarda (1989, 39) pointed out that, while small sample size (N=100) could have played a role in this finding, the main reason may have to do with the fact that residential constraints on white youths were less than those on blacks, enabling the former to flee areas of declining employment prospects, thus reducing their overall unemployment rate compared with their black counterparts whose residential choice is severely constrained.

There is little doubt that both race and space play important roles in determining the employment opportunities of the urban poor (Price and Mills 1985, Moore and Laramore 1990). Kasarda puts it clearly: "Future research on underclass joblessness might prove more profitable if it is cast in terms

of race and space, including their interaction, rather than race versus space" (Kasarda 1989, 39).

Other scholars, notably, Feldman (1977), Hodge (1990), O'Regan and Quigley (1991), and Ihlanfeldt and Sjoquist (1991) have tried to draw attention to various aspects of the mismatch hypothesis that have often been overlooked. Hodge (1990, 93) calls for the need to analyze the mismatch hypothesis not only from employees' point of view, but also from the perspectives of employers' access to labour. He illustrated the impact of spatial mismatch on employers with an example from Seattle where large hotels in the suburb of Bellevue sponsor vans to south Seattle where there are significant concentrations of new Asian immigrants.

In a recent study, O'Regan and Quigley (1991) observed that previous researchers of the spatial mismatch hypothesis have defined "access to jobs" narrowly, limiting the concept solely to geographic distance. They contend that "a more plausible interpretation may be in terms of the cost of information rather than the cost of transportation" (O'Regan and Quigley 1991, 279). In their view, the chances that an individual finds employment depend on whether that person is in a network that is rich in information about jobs.

O'Regan and Quigley (1991) therefore used the term "access to job" broadly to imply not only the spatial distance to jobs but also the information links provided by personal networks. They illustrated the role of personal networks in

providing information about job opportunities by examining the unemployment behaviour of youths, aged 16-19 years, in terms of the employment background of their parents and siblings.

O'Regan and Quigley's findings suggest that youths with employed parents and siblings are more likely to work than youths living with unemployed parents and siblings. They concluded their work by stressing the need for public policy to recognize, more explicitly, the employment effect of increasing social isolation of the urban poor (O'Regan and Quigley 1991, 291). While their analysis provides some insight into the spatial mismatch problem, they grounded much of their discussion on the implicit assumption that access to job information inevitably translates into participation in the labour market. They disregarded the important consequences of personal motivation and the ability to work, all of which may not be contingent upon the availability of job information.

In a recent study, Ihlanfeldt and Sjoquist (1991) examined another spatial dimension that has received only cursory attention to date, namely, the effect of the characteristics of work location on the occupations held by women and racial minorities. Using the 1980 United States Public Use Micro Sample (PUMS), they found that the racial and gender composition of an employment area affects the kinds of jobs blacks and women hold. Their results indicate that blacks and women have a higher probability of obtaining better quality jobs if they work in areas where large percentages of

the available jobs are in the public sector (Ihlanfeldt and Sjoquist 1991, 314).

2.5.1 Related Canadian Studies

Given the differences cited above between Canadian and American cities which have led to differences in research agendas on the spatial mismatch and suburbanization hypotheses, it is necessary to address Canadian research in a separate section. As noted earlier in this chapter, the bulk of the literature on space-related constraints on employment opportunities has focused on the situation in the United States, with considerable emphasis on the racial undertones of the mismatch thesis. To what extent are these 'race-loaded' research findings relevant to the less racially segregated Canadian spatial economy? Although the Canadian literature is modest, there have been some noteworthy studies in recent years (Cubukgil and Miller 1982, Rutherford and Wekerle 1988, Dyck 1989 and 1990, Bourne 1989).

Bourne (1989) provides the most comprehensive and sophisticated exposition of the spatial mismatch hypothesis in particular, and the changing properties of Canadian urban areas in general. He observed that previous studies of Canadian urban structure have been partial, focusing on one particular expression of the processes of spatial organization, thereby leading to erroneous interpretations and unwarranted policy proposals (Bourne 1989, 313). With this in mind, Bourne tested five general hypotheses on various aspects

of Canadian urban structure, including the spatial mismatch hypothesis and the suburbanization hypothesis. The former was tested by examining the changes in average commuting distances between 1971 and 1981 for the Toronto Census Metropolitan Area. Density gradients and coefficients of population redistribution were used to test the latter hypothesis.

He found that employment has actually decentralized in urban Canada, and the relative concentration of jobs downtown has decreased with the need for extensive commuting. At a more local scale, he indicated that the commuting distances for some suburban employees in Toronto have decreased through improved access to suburban work locations. "In contrast, average commuting distances have tended to increase for both inner city residents and central work locations" (Bourne 1989, 323). His findings suggest that the average residential densities have declined almost everywhere in urban Canada. In addition, he found that household income had increased with distance from the CBD in many Canadian cities between 1971 and 1981, and population density gradients had become much flatter in many cities, including Edmonton, by 1981. Like other Canadian analysts, however, Bourne did not address the problems faced by the urban poor as a result of the urban restructuring even though the mismatch hypothesis was originally formulated around this group of people. Moreover, Bourne did not examine the gender undertones of the hypotheses

which he tested.

The aspect of gender was treated in another Canadian study by Rutherford and Wekerle (1988) who examined the impact of residential and workplace locations on the income of female and male workers in Toronto. A data set collected by the Toronto Transit Commission in 1983 was used for the study.

Their findings indicate that women work closer to home and earn less than men. Their main theoretical contribution to the Canadian literature is the introduction of the concepts of 'captive rider' and 'choice rider'. The former, according to them, refers to persons who have no driver's license, do not own a car, or report that no car is available to them; while the latter refers to those who own an automobile or have one available to them but choose to use public transit for speed, convenience or economy. Rutherford and Wekerle (1988) focused on men and women as homogeneous groups and failed to incorporate other social divisions such as class. Arguably, the combined effect of gender and class places the poor in difficult circumstances as they try to participate in the work force.

In yet another Canadian study, Villeneuve and Rose (1988) accepted the premise that women have shorter work trips than men, found in previous American studies, and went further to investigate why this is the case. Using 1971 and 1981 census data for the Montreal metropolitan area, they explored variations in women's work trip distance by occupational

categories; and examined whether women's short work trips are more related to their household responsibilities or their positions in the labour market. Analytical tools employed included bar graphs and regression analysis.

They found that marital status, a surrogate for household responsibilities, was not as strong a correlate of work trip distance in 1981 as it was in 1971, while factors related to the labour market--income and job location--had become more closely correlated with women's work-trip distance (Villeneuve and Rose 1988, 155). Even though Villeneuve and Rose (1988) highlighted some of the important relationships between gender, work trip and occupational categories, their use of marital status as a surrogate for household responsibilities is inadequate. Arguably, single-mothers with children, especially "preschoolers", bear greater household responsibilities than married women without children. A better surrogate for household responsibilities would be the presence or absence of children or 'preschoolers' in a household.

In a recent thought-provoking study, Dyck (1989) advanced the gender-based research further by exploring how women in selected Vancouver suburbs (Coquitlam, Port Corquitlam, and Port Moody) have adjusted their lifestyles to offset the space-time constraints that they face in the urban labour market. Using ethnographic methods such as participant-observation and personal accounts of mothering experiences, Dyck (1989) found that women rely on neighbourhood

relationships including baby sitting co-operatives and car pooling (to work) to alleviate some of the difficulties they face in their child care and labour market activities. Others have arranged their employment shifts in ways that enable them to remain at home until their husbands return from work. In another paper, Dyck (1990) stressed the urgent need to incorporated women's experience in the construction of a strong feminist theoretical framework in geography linking space, time, employment and motherhood.

Finally, it should be noted that a different dimension in the analysis of job related spatial constraints was introduced earlier by Cubukgil and Miller (1982), using 1971 census data for the Toronto Census Metropolitan Area. They examined the relationship between occupational status and journey-to-work. Their main concern was to investigate whether occupational status plays a direct role in determining commuting behaviour, or whether it only influences income, which in turn is a major determinant of commuting behaviour. Their analysis was done within the analytical framework of non-parametric statistics using the tools of Chi-square and Kolmogorov-Smirnov tests. Though they found clear and consistent differences in work trip patterns among the six occupational categories studied, their results were inconclusive, because data limitations restricted their assessment of the role played by income in explaining these observed differences.

2.5.2 Key Lessons from Previous Studies

Few aspects of city life are as fundamental, yet complex as the space-related restrictions on employment activities. The preceding theoretical review indicates that the issue has been studied from a variety of perspectives. Some analysts, particularly in the United States, concentrate on the spatial restrictions on the employment activities of racial minorities. Others deal primarily with the nexus between income/occupational status and work trips. Still others focus on the impact of spatial constraints on the employment opportunities of males versus females. The subject has also received some theoretical exposition from the Feminist geographic perspective, as discussed above.

Since this extensive amount of previous research exists, it is necessary to justify the need for yet another study: First, it is reasoned that there remain several inconsistent results and partially answered questions. For example, while many of the previous analysts agree that women work closer to home than men, the search for explanation (of the space-time entrapment of women in the urban labour market) remains inconclusive as noted earlier in this chapter. In addition, the existing studies on the spatial mismatch hypothesis differ dramatically in their general conclusions as set out in the discussion above.

The bulk of the previous studies relied on secondary/census data, and were compelled to use existing

categorizations and variables with all their attendant limitations. For one thing, most census data are collected on a decennial basis, which means that the data are available, on the average, 2 to 3 years after the decade has ended. This presents an inevitable temporal gap in the data set. A case in point is Bourne's work published in 1989 but relying on the 1971 and 1981 censuses. Lag effects also exist in the inter-decennial censuses as that of 1986. In addition, the bulk of the secondary data employed in these studies were aggregated, thereby subjecting the results to ecological fallacies--the problem of inferring individual characteristics from aggregate data.

According to Ellwood (1986, 151), the spatial mismatch hypothesis is distinctly city-based, and comparisons between cities are dangerous because each city has its own spatial and socio-economic history. This is yet another reason to explore the subject within the spatial setting of different cities.

The chief compelling reason for the present study stems from the fact that none of the prior Canadian studies have focused exclusively on how the problem relates to the urban poor. While substantial attention has been paid to the relationship between gender and spatial constraints upon employment, the Canadian literature lacks treatment of the peculiar and severe spatial constraints facing the poor in our metropolitan areas.

Some positive methodological and theoretical lessons have

emanated from the preceding review. It has helped to identify the positions of other scholars in the field and highlighted the significant variables and techniques used in previous studies. The main lessons distilled can be summarized in four points:

1) Poverty cannot be explained exclusively by either individual behaviour or structural circumstances. There is the realization that poor people share the aspirations and values of the larger society, and the so-called "Culture of poverty" will disappear when the poor are provided with decent education, jobs and other resources that enhance their socio-economic mobility. No doubt, some people cause their own poverty. For others, poverty may be due to physical or mental disability, or structural malfunctioning of society. The most appropriate explanation of poverty combines both the structuralist and individualistic viewpoints.

2) It is reasoned that simplistic policies such as conservative proposals for stiffer welfare programmes and the exchange of welfare money for work, and the liberal proposals for increased government transfer payments to the poor, are not likely to bring about any long-term alteration of the conditions of the urban poor. Both policy perspectives disregard the simultaneous suburbanization of low-skilled jobs and increased centralization of "knowledge-class jobs" in

Canadian cities.

3) While there is no question that "race" plays a powerful role in explaining the relatively poor labour market participation of minorities, one cannot overlook the impact of spatial factors that restrict where people are able to work.

4) Women work closer to home than men but the explanations offered are inconclusive. Nevertheless, many analysts attribute it to a combination of factors relating women's lower pay, shorter job tenure, shorter working hours and greater household responsibilities.

2.6 The Concepts of "Space", "Spatial Constraints", and "Employment Opportunities"

Before outlining the details of the research objectives in the next chapter, it is necessary to make as clear as possible what is meant by "space", "spatial constraints" and "employment opportunities" in this study. Despite the "omnipresence" of spatial terms in geographical analysis, much of what has been said about them is quite imprecise (Sack 1973, 16).

Drawing from the prior research reviewed, and the works of respected spatial theorists such as Edward Soja, Robert David Sack, Derek Gregory, and Doreen Massey, as well as the translated works of Henri Lefebvre and Manuel Castells (both French philosophers of space), working definitions of "space"

and "spatial constraints" are discussed within the context of the labour market. The discourse emphasizes that space is a social product and that "spatiality is simultaneously the medium and outcome, presupposition and embodiment, of social action and relationship" (Soja 1985, 98).

Soja (1980) distinguishes between **contextual** or **physical space** and **created space**. The latter refers to a socially based spatiality which is shaped by a constantly evolving social actions and relationships. The contextual view of space, on the other hand, has "a lingering sense of primordiality and physical composition, objectivity and inevitability" (Soja 1980, 209). Soja contends that even though the contextual view of space has broad philosophical merits in generating discussion about its character as the "container" of human life, it remains inadequate in dealing with the subjective meaning of human spatiality (Soja 1980, 209). Soja points out that we cannot uproot spatiality from its social structure and present space only as a series of flat, mappable entities.

Massey (1984, 52) presents a similar argument by observing that geography in its sense both of distance/nearness and of physical variation of the earth's surface, is not a constraint on a pre-existing non-geographical socio-economic world. She argues that any separation between social and spatial processes is tantamount to the "separation of the inseparable" (Massey 1984, 52). In a similar vein, Castells (1983, 41) insists that "space is not

a reflection of society, it is society...one of its fundamental material dimensions. Therefore, spatial forms (and constraints) will be produced, as all other objects are, by human action." Lefebvre goes further to indicate that "space is political and ideological. It is a product literally filled with ideology" (Lefebvre 1970, translated by Enders 1976, 31).

The most rigorous encapsulation of this spacio-social dialectic dwells in Soja's assertion that: "Spatiality situates social life in an active arena where purposeful human agency jostles problematically with tendential social determinations to shape everyday activity, particularize social change, and etch into place the course of time and the making of history" (Soja 1985, 90). In an earlier paper, Soja (1980, 211) observed that social and spatial relationships are absolutely inter-reactive, interdependent; and that social relations are both space-forming and space-contingent. In his influential book, Ideology, Science and Human Geography, Gregory (1978, 120) made a similar observation: the analysis of spatial structure and constraints is not derivative and secondary to the analysis of social processes; rather, each requires the other.

It is somewhat surprising that the contextual or physicalist view of space has so permeated geographical studies that it has distorted our vocabulary (Soja 1980, 210). While adjectives such as social, historical, political, and economic, connote a reference to human action and motivation,

the term spatial typically evokes the image of something physical and external to social action; a context for society--its container--rather than a structure created by society (Soja 1980, 210).

For the purposes of the present study, the terms "space" and "spatial" are used with broader connotations. They imply more than just the physical or geometric space; they embrace the conception of organized space rooted in a social origin and filled with social meaning (Soja 1980). This broad definition is in accordance with Massey's eloquent exposition: "Once it becomes accepted that the social is inextricably spatial and the spatial impossible to divorce from its social construction and content, it follows not only that social processes should be analyzed as taking place spatially, but also that what have been thought of as spatial can be conceptualized in terms of social processes" (Massey 1984, 67).

Regarding the labour market, the term "spatial constraints" is used to cover not only the restrictions imposed on employment opportunities by physical space, such as commute distance and time, but also to include constraints engendered by socially created space such as the opportunity to obtain job information through personal or social networks, and the ability to travel always without the fear of compromising personal safety.

The term "employment opportunity" is used to denote a

combination of circumstances that enhance an individual's chances of undertaking activities tied to the labour market. These favourable circumstances include job availability, appropriate educational qualities and skills, good health and reasonable wages. The impact of spatial restrictions on these otherwise favourable conditions is termed "**the spatial constraints on employment opportunities**". The broad conception of spatial constraints adopted for the study acknowledges that "just as there are no purely spatial processes, neither are there any non-spatial social processes" (Massey 1984, 53). It is argued that any contemporary urban spatial analysis which ignores the urgency of social processes is inadequate and acquires what Soja and Hadjimichalis (1979, 3) call "the oversimplified character of a fable."

CHAPTER THREE

RESEARCH OBJECTIVES AND HYPOTHESES

3.1 Objectives

The underlying research objectives of the study are fourfold:

(a) To examine the major trends occurring in Edmonton's labour market by identifying the shifts in significance of different employment activities, and by highlighting the geographic areas experiencing the greatest employment changes.

(b) To examine the problems faced by Edmonton's low-income people in the labour market, emphasizing the effects of spatial constraints upon their employment activities.

(c) To investigate the nexus between gender and job-related spatial constraints faced by the urban poor.

(d) To suggest measures by which these space-related constraints can be alleviated to enhance the employment opportunities of low income people in Edmonton.

The central focus of the study is, therefore, to explore the differences in labour market outcomes of the poor engendered by spatial constraints. The narrow question of whether otherwise "identical" individuals achieve different labour market performances in Edmonton because of their respective residential locations will be closely examined. The central thesis of the study posits that the labour market activities of the poor in Edmonton are influenced by spatial

constraints. Edmontonians living in subsidized rental accommodation under the Community Housing Programme are used as a surrogate for the "poor" or "low-income people" in the study.

The study acknowledges that low levels of employment activities or high unemployment amongst the poor are generated by other factors such as job market discrimination and personal characteristics. The task then is to endeavour to distinguish between these factors. The study does not purport to offer definitive solutions to these problems. Nevertheless, it provides insights into the spatial problem facing the urban poor in Edmonton.

3.2 Research Hypotheses and Key Variables

In the context of the literature reviewed, three related research hypotheses--the suburbanization hypothesis, the spatial mismatch hypothesis, and the females' shorter-work-trip hypothesis--have been formulated for testing. Table 2.1 summarizes the relationships between the research objectives, hypotheses and key interacting variables.

3.2.1 The Suburbanization Hypothesis

Many of the factors responsible for the attraction of suburbs--cheaper land, high level of amenities, lower crime rates and accessibility by automobile--are available in suburban Edmonton. **The suburbanization hypothesis** examined in this study states that there is actually a continued decentralization of employment and population from downtown

Edmonton to suburban areas that has resulted in a drastically deconcentrated urban form.

Table 3.1

RESEARCH "OPERATIONALIZATION" CHART:
Research Objectives, Hypotheses and Key Variables

RESEARCH OBJECTIVES	RELATED HYPOTHESES	KEY VARIABLES
Examine the trends in Edmonton's spatial labour market.	The suburbanization hypothesis	Rates of population and employment changes, distance to the CBD.
Analyze the problems faced by the poor in the labour market by emphasizing the spatial constraints.	The spatial mismatch hypothesis	Work trip distance and time, employment characteristics, and place of residence.
Investigate the nexus between gender and job-related spatial constraints faced by the poor.	The females' shorter-work-trip hypothesis	Sex, work-trip distance and time, mode of transportation and number of children.
Suggest means of alleviating job-related spatial constraints.	None	Synthesis of important interacting variables

In his study of the 27 largest urban areas in Canada, Bourne (1989) observed that suburbanization has led to urban dispersion and lower densities. According to him, "[a]ll urban areas in Canada (to 1981 at least) have undergone inner area population decline and overall spatial deconcentration" (Bourne 1989, 318). This has resulted in both a massive

increase in the size of the city as well as restructuring of functional relationships within cities (Bourne 1989, 314).

Following the work of Bourne (1989), the suburbanization hypothesis will be tested with indices of intraurban population, employment and distance relationships. More specifically, the rates of employment and population changes in various neighbourhoods will be regressed against distances to the centre of the CBD. The rates of population and employment changes are expected to increase with distance from the centre of the CBD. However, given Edmonton's relatively compact form and moderate population size (compared with centres like Toronto, Montreal and Vancouver), we cannot expect a significant level of suburbanization here.

3.2.2 The Spatial Mismatch Hypothesis

As noted in Chapter 2, the pioneering studies on the spatial mismatch hypothesis were conducted in major metropolitan centres in the United States (e.g., Detroit and Chicago) during the late 1960s. Since then, different formulations of the mismatch hypothesis have emerged as seen in the literature reviewed in Chapter 2.

Ellwood (1986, 152) identifies 3 main conditions that must prevail for a plausible spatial mismatch hypothesis. First, there must be constraints on the residential location decisions of workers. According to Ellwood, this is critical for utility levels to differ by neighbourhoods. Second, neighbourhoods must vary in production efficiency or some

neighbourhoods must have abundance of labour or land or both. And third, the cost of journey to work or job search should not be trivial, otherwise workers forced to live in undesirable areas would simply commute to jobs in other neighbourhoods with relative ease.

Arguably, all these conditions prevail in Edmonton. The residential location of the city's poor is seriously constrained by their (low) income levels. Production cost in the inner city is higher than elsewhere for a variety of reasons: higher rent, higher crime and an attendant rise in insurance premiums, and higher cost of parking. In addition, suburbanization of jobs has generated greater distances between homes and workplaces, and limited the extent to which walking and cycling--the most readily available modes of transportation for the poor--can be used.

These are appropriate conditions for the empirical testing of the mismatch hypothesis in the spatial setting of Edmonton. However, due to some striking differences between Edmonton and the major American cities and larger Canadian cities, we must exercise caution in comparing this Edmonton study with those undertaken elsewhere. For instance, major American cities (e.g., Los Angeles and Detroit) and, to some extent, larger Canadian cities (e.g., Vancouver and Toronto) have limited public transit systems in their suburban areas, and have far greater areal sizes than Edmonton.

In addition, the major American cities, in particular,

have more severe racial problems than Edmonton. Even though reports filed under Canada's Federal Employment Equity Act suggest that racial minorities get less than their proportional share of available jobs in both the public and private sectors of the economy (National Council of Welfare 1990, 113), we must note that exclusionary housing practices on the basis of race are not a major problem in Edmonton (and most Canadian cities), compared with the situation in major American cities.

There are many different formulations of the spatial mismatch hypothesis (Ellwood 1986, 148). In this study, the main concern is not with the racial undertones of the hypothesis, but rather to test whether there is a drastic spatial separation between residence and workplace which has had a greater adverse impact on the inner city poor than their suburban counterparts. The issue of race is given minimal attention not because it is considered irrelevant, but because there are no large inner city racial ghettos in Edmonton compared with the situation in American cities.

The validity, or otherwise, of the spatial mismatch hypothesis in the context of Edmonton is examined by comparing the journey to work distance, time, and cost of central city respondents with those of their suburban counterparts using the Chi-square test. The mismatch hypothesis would be supported if low-income residents of central Edmonton display more severe job-related spatial constraints than low-income

residents of suburban Edmonton.

What is the relationship between the suburbanization hypothesis and the spatial mismatch hypothesis presented here? Is the plausible testing of the latter contingent upon confirmation of the former? Is it really necessary for there to be a drastic or continuing trend of job and population dispersal for a successful testing of the spatial mismatch hypothesis?

Though the suburbanization hypothesis provides useful information that is necessary for exploring the spatial mismatch hypothesis, a reasonable testing of the latter depends on job-related spatial restrictions, such as those identified by Ellwood (1986) and discussed in section, and does not necessarily depend on the suburbanization hypothesis. That is, the mismatch hypothesis deals explicitly with the employment problems of the poor for a fixed time; and can, therefore, be tested so long as one can established that there were substantial population and employment in suburban Edmonton during the time of the study.

3.2.3 "The Females' Shorter-Work-Trip Hypothesis"

Several studies have shown that women work closer to home than men, apparently due to the former's shorter job tenure, lower pay, shorter working hours, and greater household responsibilities (Madden 1981, Rutherford and Wekerle, 1988).

To what extent does this assertion hold in the exclusive case of the low-income population? Do poor women actually work

closer to home than their poor male counterparts? Can poor women really afford the 'luxury' of choosing between jobs on the basis of journey-to-work distances? Does the general dearth of dependable transportation among the low income population set a varying degree of spatial constraint upon the job opportunities of poor men and poor women? To what extent does the increasing suburbanization of jobs affect the gender differences in work trips amongst the urban poor, given the fact that the bulk of them (poor men and women) live in the inner city?. The "females' shorter work trip hypothesis" seeks to explore these questions.

A comparison of the work-trip distances between poor women and men will provide the empirical basis for the testing of this hypothesis. Other variables such as the number of children and respondents' marital status will help examine the hypothesis in more detail. Job-related spatial constraints are to a large extent responsible for the growing 'feminization' of poverty in Canada (Ross and Shillington 1989). Greater attention to these spatial problems may provide additional understanding of the circumstances that keep more and more women in low-wage, dead-end jobs (Rutherford and Wekerle 1988).

3.3 The Community Housing Programme in Edmonton

There are two main low income rental accommodation programmes in Edmonton--The Community Housing Programme and the Municipal Non-Profit Housing Programme. The former was

chosen for the research not only because it has about four times the number of housing units operated by the latter but, more importantly, because its project locations constitute easily identifiable clusters that auger well for a geographic analysis (as we shall see in Chapter 5). In addition, the Community Housing Programme targets clients with lower incomes, including welfare recipients, than the Municipal Non-Profit Housing Programme.

The Community Housing Programme was developed and is owned by the three levels of government--federal, provincial and municipal. The construction of the housing units is financed by the Alberta Mortgage and Housing Corporation (AMHC), while the Canadian Mortgage and Housing Corporation (CMHC) provides subsidies equal to 70% of the operating cost (Alberta Municipal Affairs, Housing Division 1990). The responsibilities of tenant selection, property management and maintenance are undertaken by the Edmonton Housing Authority, which is a non-profit housing agency.

As with all poverty-related programmes run by the government, this housing programme has its eligibility requirements. Among other things, tenants have to have resided in Alberta for at least three months. In addition, the net value of the applicant's family assets such as bank deposits, equity and real estate, stocks and bonds must not exceed $7,000 per household, excluding a car and furniture (Alberta Municipal Affairs, Housing Division 1990, 15).

Housing units provided under the programme are mostly duplexes and townhouses. Rents are set at 25% of a family's income per month. For families receiving full or partial social assistance, rents are based on social assistance rent schedules (Alberta Municipal Affairs, Housing Division 1990).

Presently, there are 107 Community housing projects throughout Edmonton with a total of 4,401 housing units. Most of the Community Housing projects are small-scale developments. This is a planning policy of the Edmonton Housing Authority, to avoid the concentration of too many 'disadvantaged' people in the same place (Murphy 1987). The number of housing units in the various projects ranges from a low of 2 in the Duplex Project located in northeast Edmonton (11220-86 Street), to a high of 135 in the Dickinsfield (I) project in north Edmonton (9203-145 Avenue). The average number of housing units in a project is 41. The social and economic characteristics of the current residents of the Community Housing projects are summarized in Table 3.2.

Some low income families may not live in such accommodations for personal reasons such as perceived "stigmatization". Others may be disqualified for reasons other than their income levels (e.g., residency requirement). Yet others who qualify may be put on a waiting list since priority is always given to those with the greatest housing needs. The term "poor" or "low income people" is, therefore, used in a restricted manner in this study. It refers to only a segment

of the urban poor--those living under this housing programme at a particular time.

Table 3.2

SUMMARY OF THE SOCIO-ECONOMIC CHARACTERISTICS OF EDMONTON'S COMMUNITY HOUSING PROGRAMME RESIDENTS

Gender of Heads of Household	
Male	1,350
Female	2,899
Age	
Average age of head of household (years)	37
Size of Household	
Average number of persons per household	3
Number of Children	
Average number of children per household	1.69
Employment Status of Heads of Household	
Number employed	2,073
Number unemployed	2,176
Marital Status of Heads of Household	
Married	1,066
Single	1,548
Commonlaw	246
Divorced	1,310
Widowed	79
Average Family Income (per month)	
Employed	$1,528
Social Assistant Recipients	$1,030
Others	$1,360

Source: Edmonton Housing Authority, February 1993 (Personal correspondence).

CHAPTER FOUR

PROFILE OF EDMONTON

4.1 Introduction

This chapter is organized in four sections. The first provides background information on Edmonton, and distinguishes between the **City of Edmonton** and **metropolitan Edmonton.** It also examines why the study focuses on the former. The second section highlights the transportation facilities in Edmonton; this is followed by a description of the significant changes occurring in the city's labour market. The final section documents the features of poverty in Edmonton, identifying those who are vulnerable to its consequences; the spatial pattern of the poor in Edmonton is treated as well. The discussion serves as a foundation for an analysis of the space-related constraints faced by the poor in Edmonton.

The chapter uses materials from a variety of sources including the city's Transportation Department, Planning and Development Department, and the Edmonton Economic Development Authority. It also draws heavily from Tracking the Trends, an annual publication by the city's Community Trends Working Group made up of representatives from Alberta Family and Social Services, Edmonton Board of Health, Edmonton Public Schools, Edmonton Catholic Schools, Edmonton Community and Family Services, Edmonton Social Planning Council, and the United Way of Edmonton.

More than any other publication in the city, Tracking the

Trends documents the socio-economic conditions, and monitors the trends likely to influence the need for human services in Edmonton. The bulk of the information on metropolitan Edmonton is derived from a recent study by Smith (1991) in which he compares the metropolitan spaces of Calgary and Edmonton using the theme of "Community aspirations and territorial justice."

4.2 Edmonton: The City and its Metropolitan Area

Edmonton was incorporated as a city in 1904, and a year later designated the capital of Alberta (Edmonton Economic Development Authority 1990, 1). Situated in the central part of the province on both banks of the North Saskatchewan River, Edmonton is the largest city (in terms of population) north of latitude 50 degrees in North America; and the fifth largest Census Metropolitan Area in Canada (after Toronto, Montreal, Vancouver, and Ottawa in that order) (Bunting and Filion 1991, 549). Edmonton is a major, manufacturing, wholesale and retail center for Western Canada. Higher oil prices in the 1970s prompted the flow of capital and a tremendous upswing in job opportunities in Edmonton. When oil prices started dropping in the early 'eighties, the city's economy began to weaken, and job opportunities dwindled.

Metropolitan Edmonton is made up of thirteen separate communities within a radius of about 40 kilometers from the center of Edmonton (Smith 1991). These include two satellite communities--Sherwood Park and St. Albert--with populations of more than 30,000. Some urban places such as Beverly and Jasper

Place have become amalgamated with the city of Edmonton during the course of its expansion, while others are functionally integrated but incorporated as separate municipalities (Table 4.1, Figure 4.1).

Alberta's oil industry has had considerable effect on the spatial development of metropolitan Edmonton. Smith (1991) points out that several small communities around Edmonton including Leduc, Redwater, and Fort Saskatchewan were transformed from agricultural service centers into oil and gas service areas. The satellite communities of St. Albert and Sherwood Park, in particular, owe much of their recent growth impetus to their proximity and quick access to the city of Edmonton. Both are now vibrant communities with a variety of commercial, industrial, cultural and recreational activities of their own.

In 1961, the urban population of the area within 40 kilometers of central Edmonton was about 340,000, of which 95% lived in the built up core of Edmonton (including Jasper Place and Beverly) (Smith 1991, 261). By 1986, the total had more than doubled to 700,000 people with 18% living outside Edmonton (Smith 1991, 261). The bulk of the residents of the Edmonton metropolitan area are in the City of Edmonton as shown by Table 4.1. Employment figures indicate the same pattern of distribution. For example, in 1990, there were 366,775 jobs located in metropolitan Edmonton, of which 81.9% were in the city of Edmonton (Edmonton Economic Development

Authority 1991a, The City of Edmonton Transportation Department 1990).

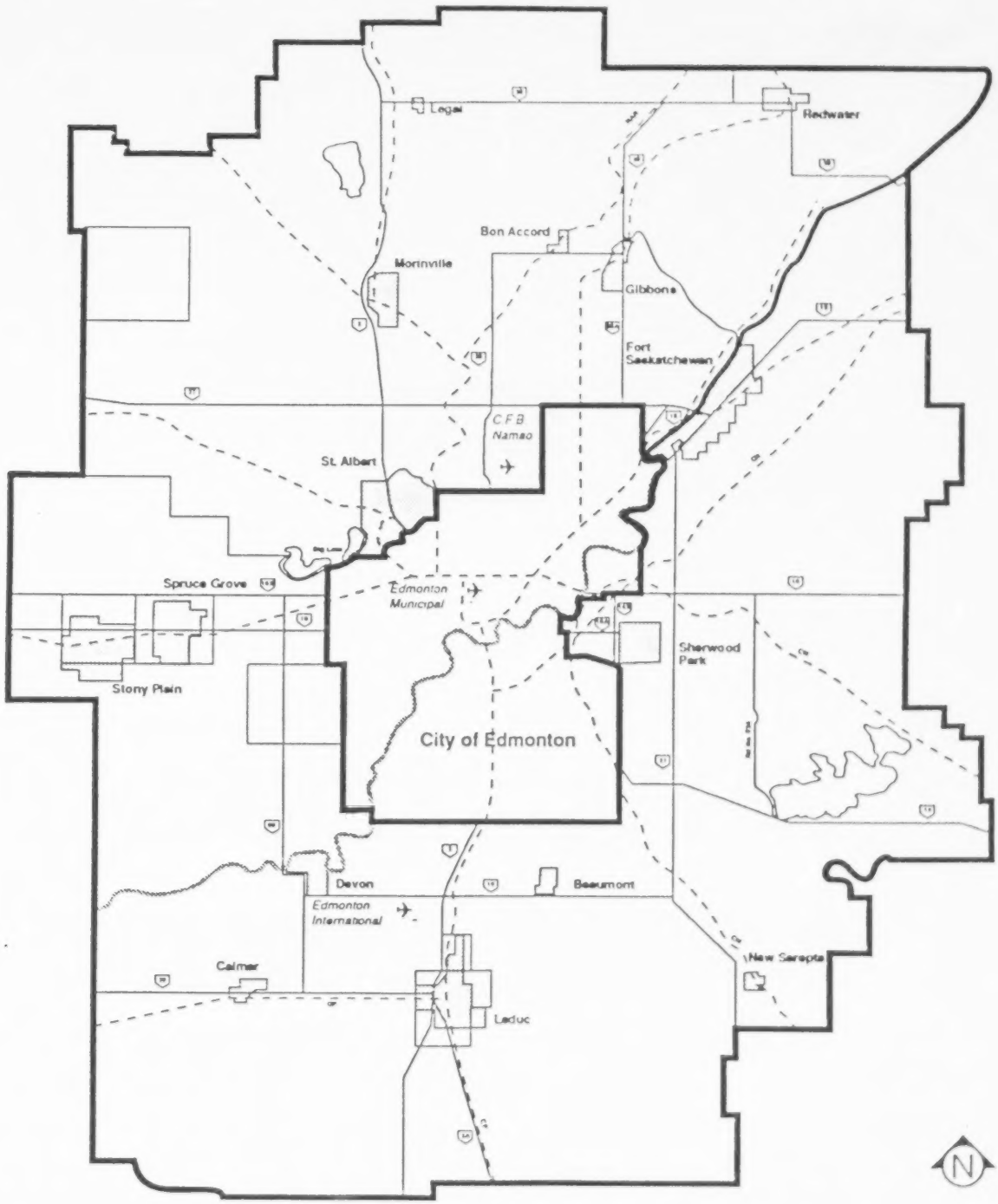
Table 4.1

POPULATION AND MUNICIPAL STATUS OF PLACES WITHIN 40 KILOMETERS OF THE CENTER OF EDMONTON, 1986

Place	Population (1986)		Status
Edmonton	573,982	(81.76)*	city
Beverly	---		amalgamated with Edmonton
Jasper Place	---		amalgamated with Edmonton
Beaumont	3,944	(0.56)	town
Bon Accord	1,355	(0.19)	town
Calmar	1,087	(0.15)	town
Devon	3,691	(0.52)	town
Fort Saskatchewan	11,983	(1.70)	city
Gibbons	2,335	(0.33)	town
Leduc	13,126	(1.86)	city
Morinville	5,364	(0.76)	town
New Sarepta	314	(0.04)	village
Sherwood Park	30,400	(4.33)	unincorporated
Spruce Grove	11,918	(1.69)	city
St Albert	36,710	(5.22)	city
Stony Plain	5,802	(0.82)	town
Total	702,011		

* Percentages are in parentheses.
Source: Smith (1991, 249).

Figure 4.1 Metropolitan Edmonton



Source: Edmonton Economic Development Authority, 1991b, 2

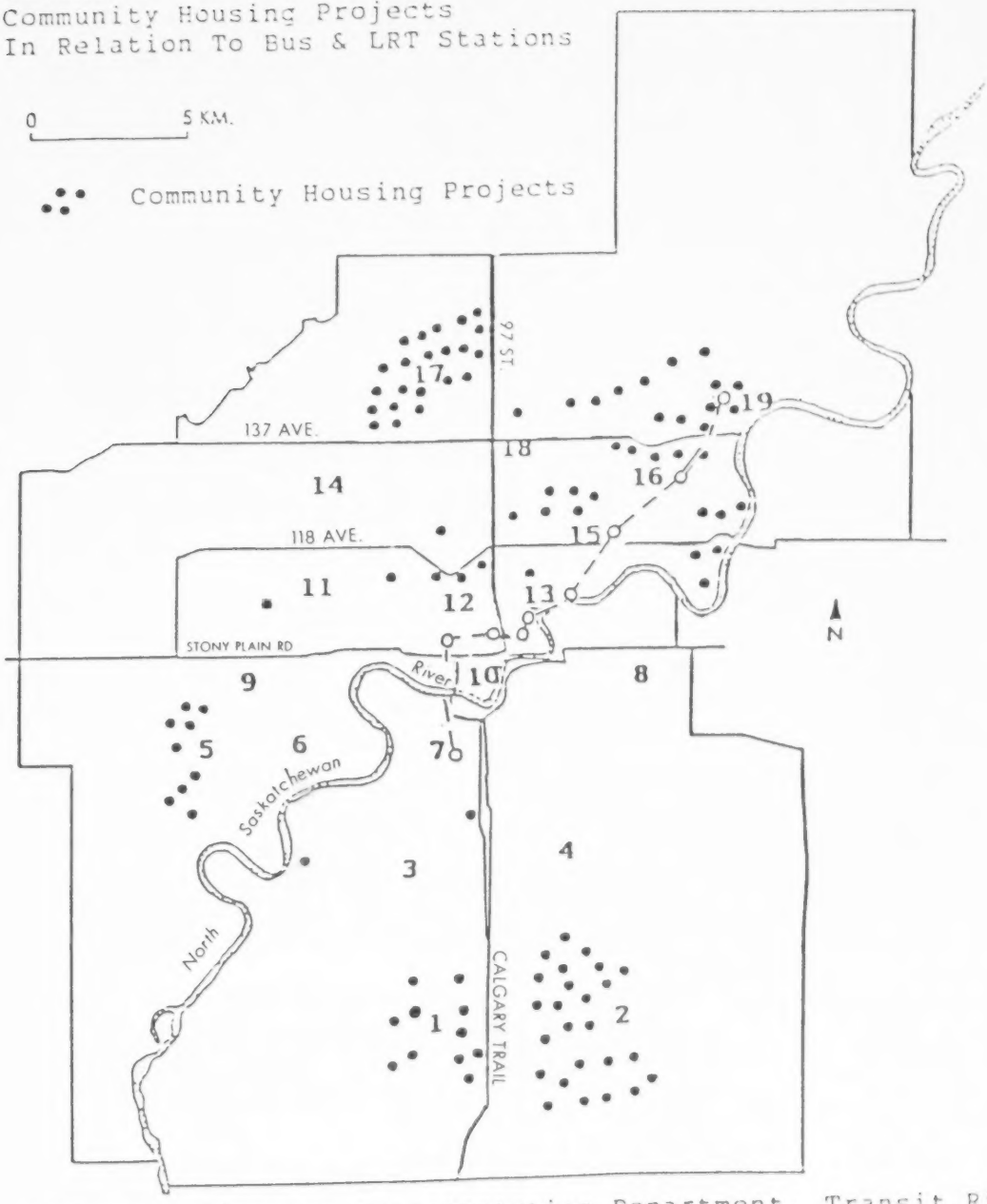
Several discussions of the spatial mismatch and suburbanization hypotheses, especially in the United States, have been undertaken in the context of metropolitan areas (Kain 1968, Harrison 1972, Ellwood 1986). However, due to the low level of population and employment dispersal into Edmonton's suburban towns and cities and the obvious logistical and temporal difficulties in collecting primary data from several rural and urban areas which are widely spaced, the present study is limited to the **City of Edmonton**. The delimitations of suburban and central Edmonton for the study are discussed later in this chapter.

4.3 Transportation Facilities in Edmonton

In 1978, Edmonton became the first North American city with a population of less than 1 million to have a Light Rail Transit (LRT) system (Edmonton Economic Development Authority, Welcome to Edmonton 1990, 11). The city's LRT is integrated with the transit bus system (Figure 4.2). Buses and LRT's from various neighborhoods meet at transit centers on a carefully designed timed-transfer basis. The city's transit system operates between 0530 hours and 0100 hours, depending on the route. Transit passengers may choose to pay cash fares, buy a book of ten tickets, or purchase monthly passes. As of January 1992, the adult cash fare stood at $1.35 for regular hours and $1.60 for peak hours. Children under 6 get a free ride, while those between 6 and 16 years as well as senior citizens pay a discount fare of 80 cents. The current adult monthly pass

Figure 4.2

Edmonton:
Community Housing Projects
In Relation To Bus & LRT Stations



Sources: Edmonton Transportation Department, Transit Ride Guide, 1992; Edmonton Housing Authority, 1990.

MAJOR BUS TRANSFER POINTS

1 Kaskitayo
2 Lakewood
3 Southgate
4 Millgate
5 W. Jasper Pl.
6 Meadowlark
7 University
8 Capilano
9 Jasper Place
10 Government
11 Westmount
12 Kingsway
13 Stadium
14 Calder
15 Coliseum
16 Belvedere
17 Castle Downs
18 Northgate
19 Clareview

LRT Route (Stations)

costs $42.00 (The City of Edmonton Transit Guide).

The city also operates a Disabled Adult Transportation System (D.A.T.S) which provides public transportation to physically and mentally disabled individuals who are unable to use existing transit facilities. In addition, several taxi companies operate in Edmonton.

As with all major Canadian cities, however, Edmonton workers face some basic commuting constraints including morning and evening rush hour traffic, and limited transit services in newly expanding suburban areas. In addition, poor Edmontonians who rely primarily on the transit system face problems relating to affordability due to rapid increases in transit fares in recent years. In 1981, the adult transit cash fare was $0.50, by 1989 it had increased to $1.25. In 1990 the city's transit system adopted the "peak and off peak hour" pricing method. The adult cash fare for off peak hour travel remained unchanged at the 1989 level of $1.25. However, this was increased to $1.35 by 1991. The peak hour fare was established at $1.50 in 1990 and increased to $1.60 by 1991.

These fare increases have had a negative impact on transit ridership in the city. Estimates by the City of Edmonton Planning and Development Department indicate that an increase in adult cash fare of $0.10 tends to reduce transit trips per capita by 1.9 (Walters and Huang 1992, 2). The city's poor also face problems relating to transit schedules, particularly during weekends when the buses and LRT trains run

at longer intervals.

Edmonton has witnessed a considerable increase in parking space in recent years. Surface parking lots in the city center increased by a total of 3,515 stalls between 1982 and 1990, with 985 added since 1988 (The Edmonton Journal, Thursday, August 22, 1991, D9). The current price--ranging between $50 and $80 per parking stall per month, and 25 cents and two dollars per hour--is apparently beyond the financial reach of many low-income workers in the city.

Most of the Community Housing Projects in the city are close to transit transfer points (Figure 4.2). The majority of them are within a maximum of 10 minutes walking distance to transit transfer points. Nevertheless, because the city's transit system is basically radial, transit connections between suburban areas are inadequate compared with those between the suburbs and the inner city (Walters and Huang 1992).

The study objectives require a comprehensive treatment of the job-related commuting problems faced by the city's poor. This will be undertaken in due course, suffice it to say that notwithstanding the innovative transportation systems available in the city, income levels still determine who uses what mode of transportation, where and why.

4.4 The Edmonton Labour Market and Labour Force

The economy of Edmonton is of great provincial significance. About one in three of all working residents of

Alberta are employed in the city of Edmonton (The City of Edmonton, Planning and Development Department 1989. The Edmonton employment market is witnessing significant changes including the expansion of suburban employment and population, the growth of part-time jobs, and the ageing of the work force. These changes are bound to shape the future of the city's labour market, and consequently demand our analytical attention. The discussion pursued here seeks to identify the major changes in the Edmonton labour market by highlighting the differences between the central and suburban job markets.

4.4.1 Data Sources and Limitations

Some clarifications on the sources and limitations of the data used in this section need to be noted. Three main data sets obtained from the City of Edmonton Transportation Department and the Planning and Development Department are used.

First, the data set on the spatial distribution of jobs in the city was derived from two reports by the City of Edmonton Transportation Department (1985, 1990). Both reports were the result of employment studies conducted in connection with analysis of travel demands in the city. They offer estimates of the number of jobs across the city using traffic districts as the basic geographic units. In neither case, however, were the data broken down into employment types, thereby curtailing analysis of the sources of job losses and gains in the city.

A second set of data was derived from several working papers and publications of the City of Edmonton Planning and Development Department (e.g., 1989a, 1989b, 1990, 1991b). This data set provides information on recent employment growth and changes in the city. Unlike the Transportation department, the Planning and Development department relied primarily on records from the business assessment data base maintained by the Edmonton Finance Department for the collection of business tax. While this data set takes into account the relative growth of each economic sector, very little consideration is given to the spatial distribution of employment in the city. Also, the data have elements of under-estimation since non-profit organizations and many businesses in the home are not recorded (Planning and Development Department 1989b). Another possible source of undercounting relates to the problem of tax evasion.

The third major source of data was the Edmonton Civic Census (published by the City of Edmonton, Planning and Development Department, e.g., 1988, 1991a), from which the bulk of the population figures were derived. The Civic census is conducted almost every year and provides the most up-to-date demographic figures for Edmonton. Estimates are provided by the Planning and Development Department for those years that the city could not conduct the census for reasons of cost.

The national census (the published records) was

inadequate in describing fully the most recent developments in the city's population and employment situation. It also lacks some important geographic details which restricted its use for the present study. In particular, while information on types of jobs held by residents of various places in the city is available, there are no data on the geographic location of these jobs. Because of this, the study relies primarily on the civic census information.

4.4.2 Changes in the Working Age Population

In 1976, the total population of the City of Edmonton was 461,559, of which 68.6% were within the working age (i.e., from 15 to 64 years). By 1981, the City's population had increased to 521,205 and the share of the working age category had also risen to 73.3%. However, while the total population of Edmonton increased to 605,538 in 1990, the share of the working age population dropped to 70.1% (Table 4.2). This drop can be explained in terms of the gradual reduction in the number of new entrants (i.e., those within the 15 to 19 years age group) into the labour force, as can be seen from Table 4.2. For instance, in 1976 and 1981, the 15 to 19 years age group constituted 15.8% and 11.8% of the total working age population respectively; however, by 1990 this figure had decreased to 9.3%.

Like the rest of Canada, Edmonton is experiencing an ageing labour force. The average age of the city's working population is expected to increase from 33.9 years in 1976 to

36.5 years by the end of 1993 (The City of Edmonton, Planning and Development Department 1989a, 11). The ageing trend is a consequence of a decrease in birth rate that most western societies have witnessed following the post World War II "baby boom". The birth rate of Edmonton was 32.3% births per 1000 persons in 1947; the corresponding statistics for 1976, 1986, and 1990 were 19.6, 18.9, and 17.5 respectively (The City of Edmonton, Strategic Planning Branch 1991, 1).

Table 4.2

Edmonton: Working Age Population Distribution, 1976, 1981, 1990.

Age Group	1976 Number	%	1981 Number	%	1990 Number	%
15-19	50,275	15.8	44,899	11.8	39,573	9.3
20-24	58,736	18.5	74,786	19.6	59,479	14.0
25-34	75,421	23.8	112,286	29.4	130,699	30.8
35-44	51,895	16.3	60,348	15.8	91,215	21.5
45-54	48,094	15.2	50,895	13.3	56,613	13.3
55-64	32,981	10.4	38,808	10.1	47,050	11.1
Working Age	317,393	100.0	382,022	100.0	424,629	100.0
Total Pop.	461,559		521,205		605,538	
Working Age Population as a Percentage of Total Population		68.8		73.3		70.1

Source: The City of Edmonton, Planning and Development Department 1988 and 1991.

Another important feature in the city's work force is the increasing participation of females in paid employment. In 1981, the labour force participation rate for Edmonton's males and females were 84.8% and 62.8% respectively; by 1989, the males' rate had dropped to 80.4%, while the females' had increased to 64.9% (Edmonton Community Trends Working Group 1990).

Growth in the service sector and retail industry has increased the number of part-time jobs in the city. Employment in the service sector grew from 59,000 jobs in 1971 to 110,000 jobs in 1981, and increased again to 125,900 by 1988 (The City of Edmonton, Planning and Development Department 1989b). Most of these jobs pay low wages and offer few fringe benefits, yet their flexible hours make them attractive to women raising children. It is estimated that 73% of all part-time workers in Edmonton in 1990 were women (Edmonton Social Planning Council, Alberta Facts, May 1990, 8).

4.4.3. Business Growth in Edmonton

Between 1978 and 1990, the number of businesses in the city of Edmonton increased by 48.3% (The City of Edmonton, Planning and Development Department 1991b, 11) The peak year was 1981 when the number of rose by 12.8% over the 1980 figure of 14,227 (Table 4.3). But this was followed by a precipitous drop in business activities in 1982 with the onset of the economic recession. Since 1982, the highest growth rate of 5.7 was recorded in 1985 (Table 4.3).

Nineteen ninety was not an encouraging year in business growth in Edmonton. Even the higher oil prices sparked by the Persian Gulf War did not stimulate economic growth in the city. Since 1983, the lowest annual growth rate of businesses was recorded in 1990, as can be seen from Table 4.3.

Table 4.3

Edmonton: Business Growth, 1978-1990

Year	Total Number of Businesses*	Annual Percentage Change
1978	12,400	2.9
1979	13,050	5.2
1980	14,227	9.0
1981	16,044	12.8
1982	15,085	-6.0
1983	15,151	0.4
1984	15,378	1.5
1985	16,249	5.7
1986	17,163	5.6
1987	17,438	1.6
1988	17,996	3.2
1989	18,229	1.3
1990	18,390	0.9

Source: The City of Edmonton, Planning and Development Department 1988, 1991b.

*These are estimates from the business assessment data base maintained by the office of the City Assessor for the collection of taxes.

4.4.4. Sectoral Growth of Businesses in Edmonton

The collection of detailed business information on sectoral basis, by the city's Planning Office, began only in 1986 (The City of Edmonton, Planning and Development Department 1991b). It is, therefore, difficult to establish a consistent and reliable picture of the various businesses in the city prior to 1986.

Table 4.4 shows the relative importance of various business activities in Edmonton for 1986 and 1990. It shows that retail trade dominates the Edmonton's business activities. More than a third of the city's businesses were in retailing during 1986 and 1991. The retail sector employed 45,210 persons in 1986, a 13% share of the total employment in the city (The City of Edmonton, Planning and Development Department 1989b, 18). Edmonton has many climate-controlled shopping malls located throughout the city (Figure 4.3). In the downtown area, an expanding system of underground and skywalk pedways link major shopping complexes. The city's West Edmonton Mall with more than 600 shops is the world's largest planned shopping center (Jackson and Johnson 1991, 226).

Other important businesses in Edmonton include business services; food, beverages, and accommodation; health and social sciences; construction; and manufacturing. Each of these accounted for more than 5% of the total number of businesses in the city during 1986 and 1991. Between 1986 and 1991, the highest rates of business growth were among

Table 4.4

Edmonton: Total Businesses By Types, 1986 and 1991

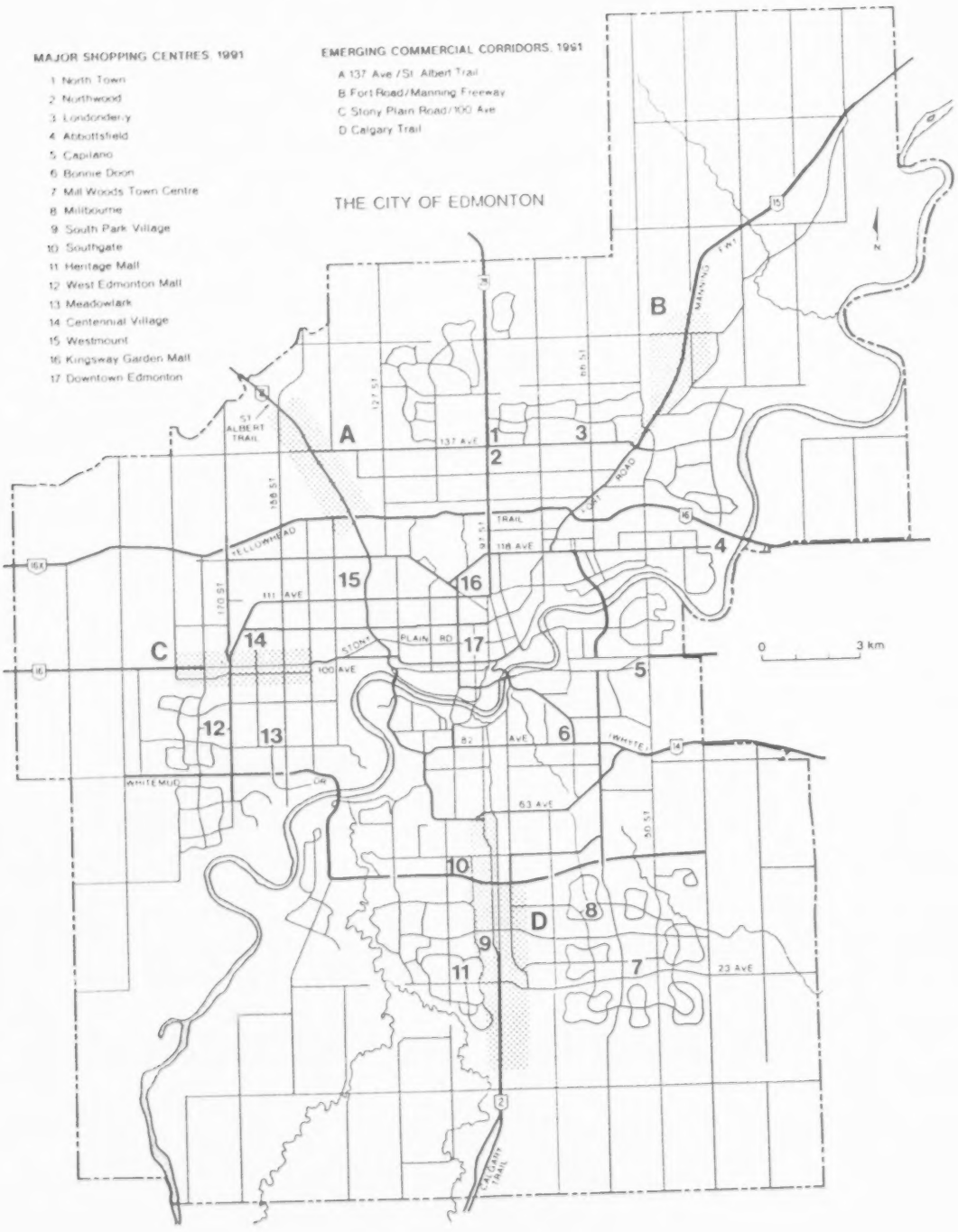
Business Type	1986 Number	(%)	1991 Number	(%)	% Change 1986-91
Retail Trade	6,204	(36.4)	6,554	(36.2)	5.6
Business Services	2,277	(13.3)	2,416	(13.3)	6.1
Food, Bev. & Accomm.	1,307	(7.6)	1,433	(7.9)	9.6
Health and Social Sc.	1,218	(7.1)	1,310	(7.2)	7.6
Construction	1,131	(6.6)	1,144	(6.3)	1.1
Manufacturing	920	(5.4)	950	(5.2)	3.5
Personal & Household	844	(4.9)	862	(4.8)	2.1
Wholesale Trade	776	(4.5)	785	(4.3)	1.5
Finance and Insurance	514	(3.0)	466	(2.6)	-9.3
Other Services	418	(2.4)	447	(2.5)	6.9
Transport and Storage	398	(2.3)	413	(2.3)	3.8
Real Est/Insur. Agents	254	(1.5)	274	(1.5)	7.9
Mining and Oilwell	240	(1.4)	187	(1.0)	-22.1
Recreation/Amusement	167	(1.0)	145	(0.8)	-13.1
Communication & Util.	93	(0.5)	104	(0.6)	11.8
Educational Services	87	(0.5)	91	(0.5)	4.6
Agriculture and Related	45	(0.3)	49	(0.3)	8.9
Unclassified	234	(1.4)	478	(2.6)	104.1
Total	17,163		18,108		5.5

Sources: (i) The City of Edmonton, Planning and Development Department 1992, Business Growth in Edmonton, 1991 Research Paper # 40. Table 3.

(ii) The City of Edmonton, Planning and Development Department 1988, Business Growth in Edmonton Research Paper # 25 Table A4.

Figure 4.3

Edmonton: Major Shopping Centres & Commercial Corridors, 1991



Source: The City of Edmonton, Planning and Development Department, 1991b; Edmonton Economic Development Authority, 1989a.

communications and utilities (11.8%); food, beverage and accommodation (9.2%); agriculture and related (8.9%); real estate and insurance agents (7.9%); and health and social sciences (7.6%) (Table 4.4). Other business types with high growth rates included business services (6.1%), retail trade (5.6%), and educational services (4.6%).

During the same period, the most dramatic loss occurred in the mining and oilwell business group (-22.1%). The number of businesses in this industry is relatively small, with only 187 businesses in 1991. In recent years, large oil and gas companies in Edmonton have been rationalizing to reduce production costs and enhance efficiency. This has forced the closure of smaller and less competitive companies in the industry (The City of Edmonton, Strategic Planning Branch 1991, 3). Recreation and amusement businesses and finance and insurance businesses had also been losing grounds between 1986 and 1991, with growth rates of -13.1% and -9.3% respectively.

4.4.5. Employment Locations: Inner City Versus Suburban Edmonton

Defining the Inner City and Suburban Edmonton: In this section, we examine the Edmonton labour market in the context of comparable changes taking place in central Edmonton and the suburban areas. An initial requirement is a closer look at what constitutes the inner city or central Edmonton in the following discussion.

The inner city "becomes more diffuse as an object of

study as we approach it empirically" (Ley 1991, 336). While there is not a single criterion for bounding the inner city, many Canadian studies (Brown and Burke 1979; Ley 1986, 1988, 1991; Broadway 1992) use a combination of housing age and proximity to the CBD. Though old neighborhoods around various CBDs that we call inner cities, share some important characteristics, such as the images of poverty and social pathologies, there are no unequivocal grounds for delimiting the inner city as a geographical entity (Bourne 1982, Ley 1991). The profile of any inner city is influenced by its specific spatial and historical context, not to mention the "subjective images projecting a topography of meaning in the minds of urban dwellers" (Ley 1991, 319).

Following the City's Planning Department, the present study defines Edmonton's inner city as the part of the city that was developed before 1971 (Walters and Huang 1992, 5). The geographic area of the inner city, estimated at 162 square kilometers, coincides with the boundaries of eleven traffic districts[1]--CBD, University, Southgate, Jasper Place, North Central, Calder, Londonderry, Beverly, Capilano, Bonnie Doon and CBD Fringe (Figures 4.4) (Walters and Huang 1992). The remaining 22 constitute suburban Edmonton traffic districts. The boundaries of the traffic districts are based on the main

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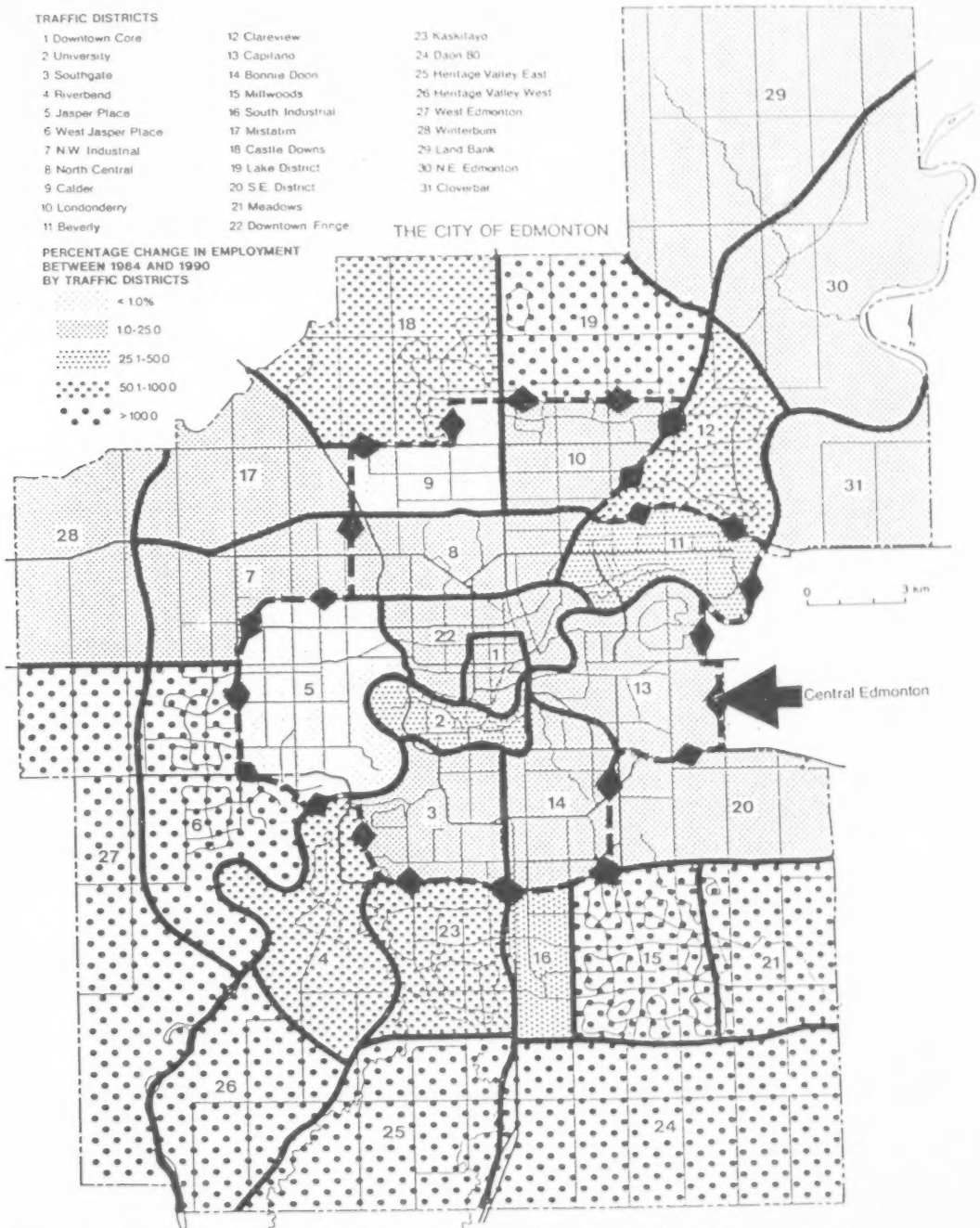
[1] For the purposes of planning the transportation needs of the city, the Edmonton Transportation Department has divided the city into 31 traffic districts, out of which the eleven districts listed are labelled the "inner city traffic districts" (Figure 4.4).

Fig. 4.4 Employment Changes Between Central & Suburban Edmonton



Source: The City of Edmonton, Transportation Department, 1985, & 1990.

physical barriers and facilitators of movement in the city including road networks, water bodies and landuse patterns. As in all forms of regionalization, authorities at the city's Transportation Department concede that some elements of arbitrariness were involved in devising the boundaries of the traffic districts.

Without question, this delineation of the inner city (the 1971 division) results in a relatively large area, part of which has few of the characteristics that are normally associated with the inner city. This definition can blur, therefore, some of the differences found between suburban and central Edmonton in the study. The question, then, is: why does the study use the planners' definition of the inner city?

The adoption of this spatial framework for the study was based on data availability. The City of Edmonton's Planning and Transportation Departments (the two main sources of secondary data for the study, discussed in section 4.4.1) use the above definition of inner city in their data collection and publications. Moreover, all of the nine Community Housing Projects in the Edmonton central cluster, one of the four housing clusters surveyed for the present study (discussed in Chapter 5), fall within this same area. It was realized that any other definition of the inner city that reduces its size will also decrease the already small number of housing projects (9 out of 107) within central Edmonton, and thereby restrict the comparative analysis between suburban and central

Edmonton--an analysis that constitutes the core of the study.

4.4.6 The Growth of Suburban Employment

Measurements by the Transportation Department indicate that there were a total of 267,837 jobs in Edmonton in 1984, out of which 207,095 or 77.3%, were in central Edmonton. By the end of 1990, the number of inner city employees had increased by a meagre 3.9% to a total of 215,250 (Table 4.5). During the same period, the total suburban employment burgeoned from 60,742 to 85, 150. This represents an increase of 40.2%. Total employment in central Edmonton is forecasted to expand by 8.6% between 1984 and 1995, the corresponding figure for suburban Edmonton is as high as 70.6% (The City of Edmonton, Transportation Department 1985, 1990).

Between 1984 and 1990, some central Edmonton traffic districts, Calder and Jasper Place, lost jobs. During the same period suburban districts such as West Jasper Place, Millwoods, Lake District and West Edmonton--witnessed employment growth rates well in excess of 100% (Figure 4.4). However, because several suburban districts had small numbers of businesses in 1984, their respective contributions to the total number of businesses in the city by 1990 were minimal; central Edmonton still accounted for 71.6% of the city's jobs in 1990 (Table 4.5).

It is difficult to ascertain a clear picture of the changing composition of employment between suburban and central Edmonton due to the lack of data. To maximize

Table 4.5

Edmonton: Traffic Districts Employment, 1984 & 1990.

Traffic District	Employment 1984	Employment 1990	Percentage change
1	63,000	63,950	1.5%
2	13,640	18,350	34.5
3	12,173	12,950	6.5
5	14,746	14,250	-3.4
8	24,029	24,700	2.3
9	8,223	5,550	-32.5
10	8,961	9,400	4.9
11	3,850	5,200	35.1
13	9,368	10,100	7.8
14	19,320	20,100	4.0
22	29,785	30,700	3.1
Central total	207,095	215,250	3.9
4	654	1,100	68.2
6	4,839	10,900	125.2
12	1,931	3,050	58.0
15	3,378	8,350	147.2
18	1,864	3,500	88.0
19	233	550	136.0
21	0	150	*
23	2,765	5,350	93.5
24	0	200	*
25	0	50	*
26	0	50	*
27	49	500	920.4
7	22,849	26,000	13.8
16	5,550	8,050	45.0
17	4,394	4,550	3.5
20	7,328	7,800	6.4
28	1,178	1,200	1.9
29	295	300	1.7
30	982	1,000	1.8
31	2,453	2,500	1.9
Suburban total	60,742	85,150	40.2
City total	267,837	300,400	12.2

* Division by zero occurred in computation.
Source: City of Edmonton, Transportation Department 1985, 1990

Note: The net employment gains for Central and Suburban Edmonton between 1984 and 1990 were 8155 and 24,408 respectively.

accessibility to people and firms in the urban system, companies offering highly specialized goods and services (such as accounting firms and luxury goods shops) have traditionally located in central Edmonton. Whether this continues to be the case is hard to determine. Regarding public administration jobs, however, Walters and Huang (1992, 9) have argued that recent fiscal restraints at the three levels of government--federal, provincial and municipal--have resulted in a below average job growth in this sector. This has had an adverse effect on Edmonton's inner city since the majority of public administration jobs in the province are located there (Walters and Huang 1992, 9).

Basing his definition of the "inner city on the age of housing stock and proximity to the central business district, Broadway (1992, 190) found that manufacturing employment among Edmonton's inner city residents declined by 22% between 1971 and 1986. In contrast, manufacturing employment for residents of the rest of Edmonton's CMA increased by 78% during the same period. The shift in manufacturing employment to the suburbs is clearly a factor in these employment changes (Broadway 1992, 190).

In a recent study, Michalak and Fairbairn (1993) observed an ongoing selective suburbanization of producer service employment in Edmonton. According to them, the firms moving to the suburbs are usually the exporters of producer services, and are less likely to require face-to-face contact that the

inner city permits. The spatial restructuring of the city's wholesale sector is not different. Smith (1993) noted that changing locational requirements had caused considerable suburbanization of wholesale business in Edmonton. Estimates by Smith (1993) show that in 1992, "[n]o more than 5 per cent of the net area (of the central wholesale district) was occupied by wholesale businesses and only three firms remained, out of roughly 150 that had been present in 1953" (Smith 1993, 64, mine in parenthesis).

4.4.7. Emerging Commercial Corridors in Suburban Edmonton

In recent years, large scale commercial developments have transformed major highway entrances to Edmonton into "megastrips" or commercial corridors (Figure 4.3). Development in these megastrips is composed of a wide variety of businesses--e.g., manufacturing, wholesale trade, construction, mining and oilwell. Of the four main megastrips identified by the Planning and Development Department (Table 4.6) growth along the Calgary Trail has been particularly dramatic. Before extrapolating future business growth along these corridors, we must examine the bases for expansion and note some qualifications. It is in this spirit that the City's Planning and Development Department has set up a task force to investigate developments along these highway entrances to the city (The City of Edmonton, Planning and Development Department 1991b).

Table 4.6

Edmonton: Changes in the Number of Businesses in Major Commercial Corridors*

Megastrip	1989	1990
Stony Plain/100 Ave.	-5	-3
137 Ave./St Albert Trail	14	11
Fort Road/Manning Fwy.	6	-3
Calgary Trail	16	21

Source: The City of Edmonton, Planning and Development Dept. (1990:9).

*Data for earlier years could, perhaps, show greater changes but were unavailable.

4.4.8. Population Changes Between Central and Suburban Edmonton

As with the city's employment, the population of Edmonton suburbs has been expanding considerably in recent years. At the same time, Central Edmonton is experiencing a downward trend in its population growth. In 1976, only 12.2% of the city's population of 461,559 lived outside the boundary of central Edmonton as it has been defined for this study. By 1990, the suburban share of the total Edmonton population has increased to 45.1% (Table 4.7). Between 1976 and 1990 central Edmonton lost a population of 53,734 (Figure 4.5 and Table 4.7). This amounts to a 13% decrease in population in less than one and a half decades. During the same period, the

population of suburban Edmonton escalated by 350%; this is an annual growth rate of 25%.

Projections by several departments of the city, including the Transportation and Planning Departments, point to a continued suburbanization of the city's labour market and population (The City of Edmonton, Planning and Development Department 1990).

Table 4.7

Edmonton: Population Distribution for Central Edmonton and Suburbs, Selected Years.

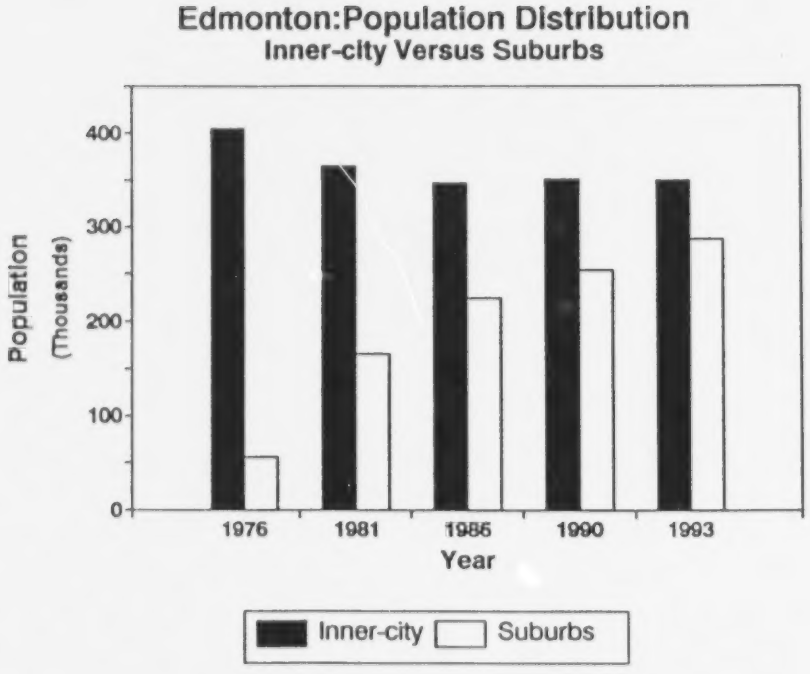
YEAR	Central	Suburb	City total
1976	405,134 (87.8%)	56,425 (12.2%)	461,559
1981	364,531 (68.7%)	166,056 (31.3%)	530,587
1986	346,964 (60.7%)	224,542 (39.3%)	571,506
1990	351,400 (58.0%)	254,100 (42.0%)	605,500
1993*	350,400 (54.9%)	287,400 (45.1%)	637,800

Sources: (1) The City of Edmonton, Planning and Development Department (1988, 4), Population Forecasts by Traffic Districts, 1988-2008 Research Paper # 25.

(2) The City of Edmonton, Planning and Development Department (1990a, 118) Edmonton Demographic Indicators, 1990.

Note: 1990 and 1993 figures are rounded to the nearest hundreds. * 1993 figures are projections.

Figure 4.5



Source: The City of Edmonton, Planning and Development Department, 1988, & 1990.

4.5 Poverty in Edmonton

The growing incidence of poverty in Edmonton is a source of considerable frustration and concern to many social advocates, intellectuals and policy-makers, as well as to those who experience it. Besides the consequences felt by the poor, poverty imposes very high costs on society as a whole. These include serious health problems, loss of output and the cost of controlling crime associated with inequality and poverty. There is no shortage of statistics that suggest, but do not prove, a link between poverty and various debilitating conditions (Edmonton Social Planning Council 1990).

In a recent publication, the Edmonton Social Planning Council identified some unhealthy connections between poverty and illness. Among other things, the Council noted that poor Edmontonians are much more likely to have more illnesses, live and work in more hazardous environments, and die from preventable and curable diseases (Edmonton Social Planning Council 1990, 1).

The characteristic features of poverty in Edmonton are by no means peculiar. As with many urban centers in Canada, the bulk of Edmonton's poor are females, Aboriginal people and disabled people (Ross and Shillington 1989, Edmonton Community Trends Working Group 1990, The National Council of Welfare 1990). The next section briefly describes the main features of poverty in Edmonton, identifying those who are most vulnerable to its consequences.

4.5.1 Women and Poverty in Edmonton

Women in Edmonton, as in most places in Canada, face a significantly higher risk of poverty than men (Edmonton Social Planning Council 1991, Ross and Shillington 1989). Since 1971, women throughout Canada have represented 57% to 61% of all the adults in poverty (Evans 1991). Using a 1985 data from Statistics Canada, the Edmonton Community Trends Working Group (1990) demonstrated that women in Edmonton are disproportionately represented in the ranks of the poor than men. For instance, while 21.1% of "single-father families" were in poverty (defined as those who devote at least 58.5% of their incomes on food, shelter and clothing), the corresponding figure for "single-mother families" was 47.7%.

Social analysts agree that the causes of women's poverty differ markedly from those of men. 'Male-poverty' is usually linked directly to the working of the labour market, through inadequate wages for certain jobs or through the dearth of employment avenues and the lack of educational/skill qualifications. In contrast, 'female-poverty' is related not only to the working of the labour market but, more importantly, to an intricate interplay of factors such as divorce, separation, and women's unique roles as mothers and homemakers (Canadian Advisory Board on the Status of Women 1990, 9).

Partly because raising children and running a household are heavy burdens that most women assume with little help from

anybody, and partly because affordable day care facilities are scarce, most women still spend many years outside the labour market or in low-paying part-time jobs. It is estimated that 73% of all part-time workers in Edmonton are women (Edmonton Social Planning Council, Alberta Facts, May, 1990, 8). Such jobs normally pay badly and offer very few fringe benefits and pension plans. Yet, their flexible hours make them attractive to women raising children. Because most pension plans are based on income (which is usually smaller for women) and penalize those who are absent from the labour force for an extended time, women are more likely to receive less pension money after retirement.

The National Council of Welfare's assessment of the increasing "feminization of poverty" is correct: a major safeguard which stands between most married women and poverty is their husbands' incomes. When this "safety net" is broken or disturbed--because the husband cannot earn enough, because of a divorce or separation, or because the husband dies--women who spent many years of their lives raising children become vulnerable to poverty (National Council of Welfare 1990, 3).

4.5.2 Aboriginal People and Poverty in Edmonton

At the time of the 1986 census, 27,950 persons representing 2.2% of Edmonton's total population reported Aboriginal origins. The relative youth of Edmonton's Aboriginals along with their higher birth rate and continuous

in-migration from rural communities, suggest that their population will grow very rapidly over the coming years (Murphy 1991, 2). In fact, recent estimates put the Aboriginals' share of Edmonton's population at 5% (Murphy 1991).

Though the poverty amongst Aboriginal people in Edmonton is not well-documented, many analysts believe that Aboriginal people are much more disadvantaged than the general population (MacDonald 1990, Murphy 1991). It is estimated that almost 24% of Alberta's Aboriginal people over 15 years of age had less than grade 9 as their highest level of schooling, compared with the provincial average of 11% (MacDonald 1990). Also, the average income for Aboriginal Albertans was estimated to be two-thirds of the provincial average of $19,300 in 1986 (MacDonald 1990).

Several factors conspire to place Edmonton Aboriginals in these circumstances. Records indicate that Aboriginals in Edmonton have not only high unemployment rates, but also a very irregular pattern of labour force participation (Murphy 1991). In 1990, only half of the city's Aboriginal workforce worked full-time throughout the year, compared with two-thirds of non-Aboriginal workers in Edmonton (Murphy 1991, 5). Single parents head a third of Aboriginal families in Edmonton, compared with only an eighth of non-Aboriginal families. In addition, government transfer payments account for nearly 20% of the family income of Edmonton Aboriginals, relative to less

than 10% for Edmonton families as a whole (Murphy 1991, 5-6).

A major source of poverty amongst Aboriginal people is systematic discrimination particularly in the labour market (Murphy 1991). There is widespread reluctance on the part of employers to hire Aboriginal people in Edmonton (Murphy 1991). Even when they get jobs, they are often subjected to marked exploitation. Reports filed under the Federal Employment Equity Act indicate that Aboriginal people get much less than their proportional share of the available jobs in both the public and private sectors of the economy (National Council of Welfare 1990, 113).

4.5.3 Poverty Among Disabled People in Edmonton

A 1986/87 health and activity survey by Statistics Canada revealed that approximately 11% of the population of Edmonton CMA were physically or mentally challenged[2] (Statistics Canada Catalogue 82-611). The survey noted that about 57% of disabled persons in Edmonton CMA had incomes below $15,000 per annum in 1986, and more than 45% of them were either unemployed or not in the labour force because of their disability. Comparable statistics for the City of Edmonton is not available, but there is no reason to expect a different situation in the city.

The main disabling conditions are problems relating to

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[2]The survey defined "physically or mentally challenged" as any restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human being.

walking, standing, body movement and dexterity, hearing and sight. It has been established that the main causes of these disabilities are accident, in the case of younger people, and chronic illnesses such as arthritis and rheumatism, in older people (Statistics Canada Catalogue 82-611; Community Trends Working Group 1991, 18). A major factor that keeps disabled individuals outside the labour market is the unwillingness of many employers to make accommodations for disabled employees. These accommodations include easy wheelchair access to offices and the procurement of special office equipment and furniture to suit the needs of disabled employees.

4.6 Spatial Pattern of Edmonton's Poor

Analysis into spatial patterns of the urban poor has been undertaken from a variety of standpoints. The principal analysis, initially made by the Chicago human ecologists in the 1920s, was based on the pattern of growth of the city's population (Cadwallader 1985). According to this view, as the city grows, the wealthier build their homes on the vacant land on the periphery, leaving the old houses near the city center to the urban poor. This sequence of invasion and succession yields a residential land use pattern in which the poor are usually found in the inner city area of cast-off housing, the only type of housing they can afford (Cadwallader 1985, Yeates 1990).

Alonso formulated a different theory which explains the location of the urban poor in terms of the bidding process for

land (or the bid rent process). The urban poor, with relatively little disposable income consume small amounts of space in the inner city, where commuting costs are low. The rich, on the other hand with much larger disposable incomes can pay the same amount of money for larger plots of land near the edge of the city or suburbs, and still have enough left to cover commuting costs. This explains the apparent paradox of the urban poor living on expensive land in the inner city (Cadwallader 1985). Other urban analysts take their points of departure from psychological and social motivations. They argue that the key role is played by social status and considerations of the transmission of values (Elgie 1970). Frequently, they focus on people's sensitivity to class differences and the desire of people of similar characteristics and background to live together.

Discussions on both the spatial mismatch hypothesis and the suburbanization hypothesis are grounded in the implicit assumption that the urban poor usually reside in the inner cities. The question, then, is: To what extent does this assumption hold in Edmonton?

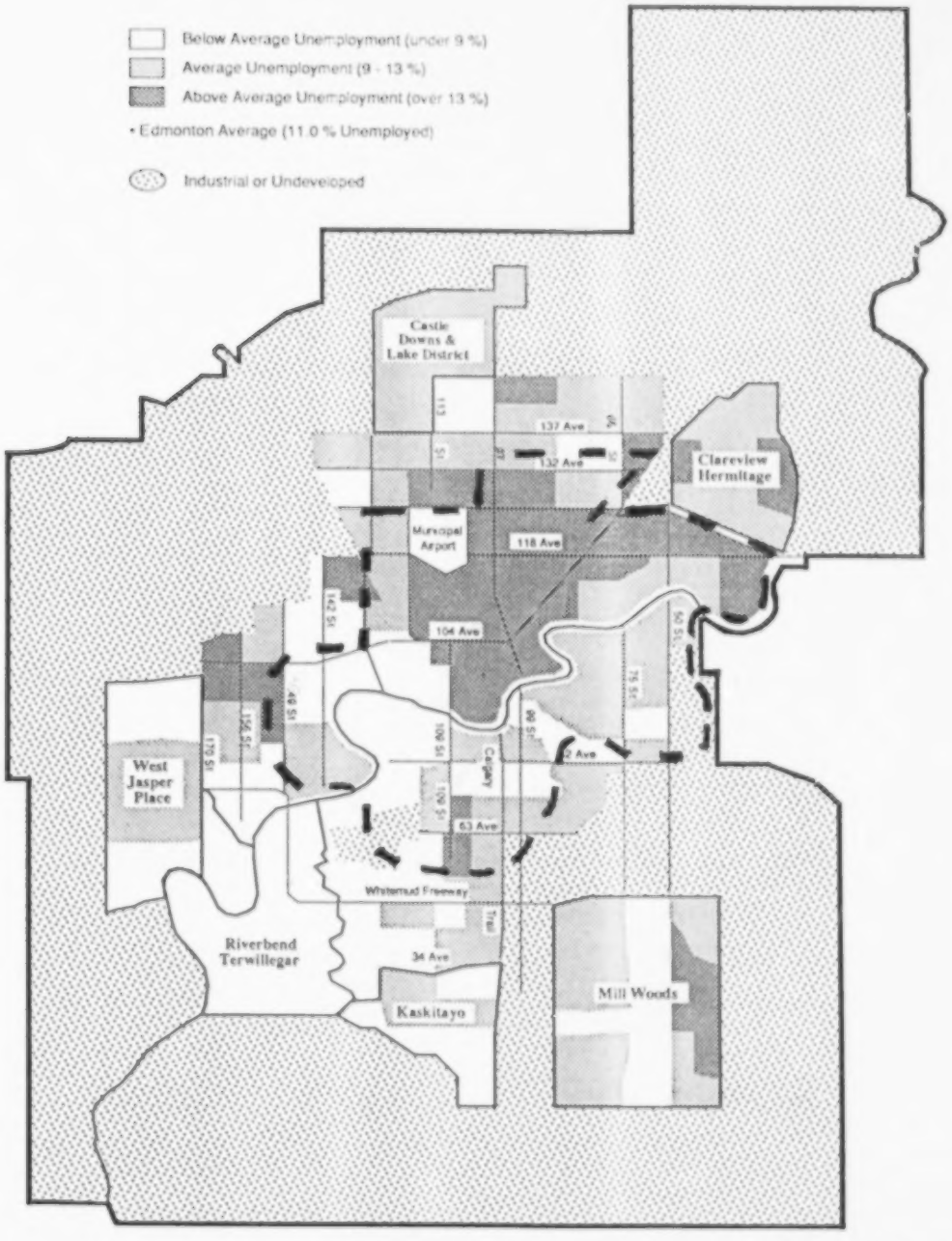
Figures 4.6, 4.7, and 4.8 provide useful insights into the spatial pattern of Edmonton's poor. The figures show that neighborhoods north of the North Saskatchewan River including McCauley, Boyle Street, Downtown, Parkdale, and Eastwood have levels of unemployment that are higher than the city's average (Figure 4.6). In addition, these central Edmonton

neighborhoods have a higher incidence of low income families (measured as families which spend at least 58.5 % of their income on food, shelter and clothing) and greater proportions of Social Welfare recipients than other communities in the city as can be seen from Figures 4.7 and 4.8. The general pattern that emerges from the figures points to a disproportionate concentration of the city's poor in communities north of the North Saskatchewan River, particularly in and around central Edmonton.

We have realized from this brief overview that as in many Canadian urban centres, the greater proportion of Edmonton's low-income population is composed of Aboriginal people, disabled persons and women (especially single mothers). Regarding their spatial pattern, it has been shown that the bulk of the city's poor resides in communities north of the North Saskatchewan river, particularly in and around central Edmonton.

Figure 4.6

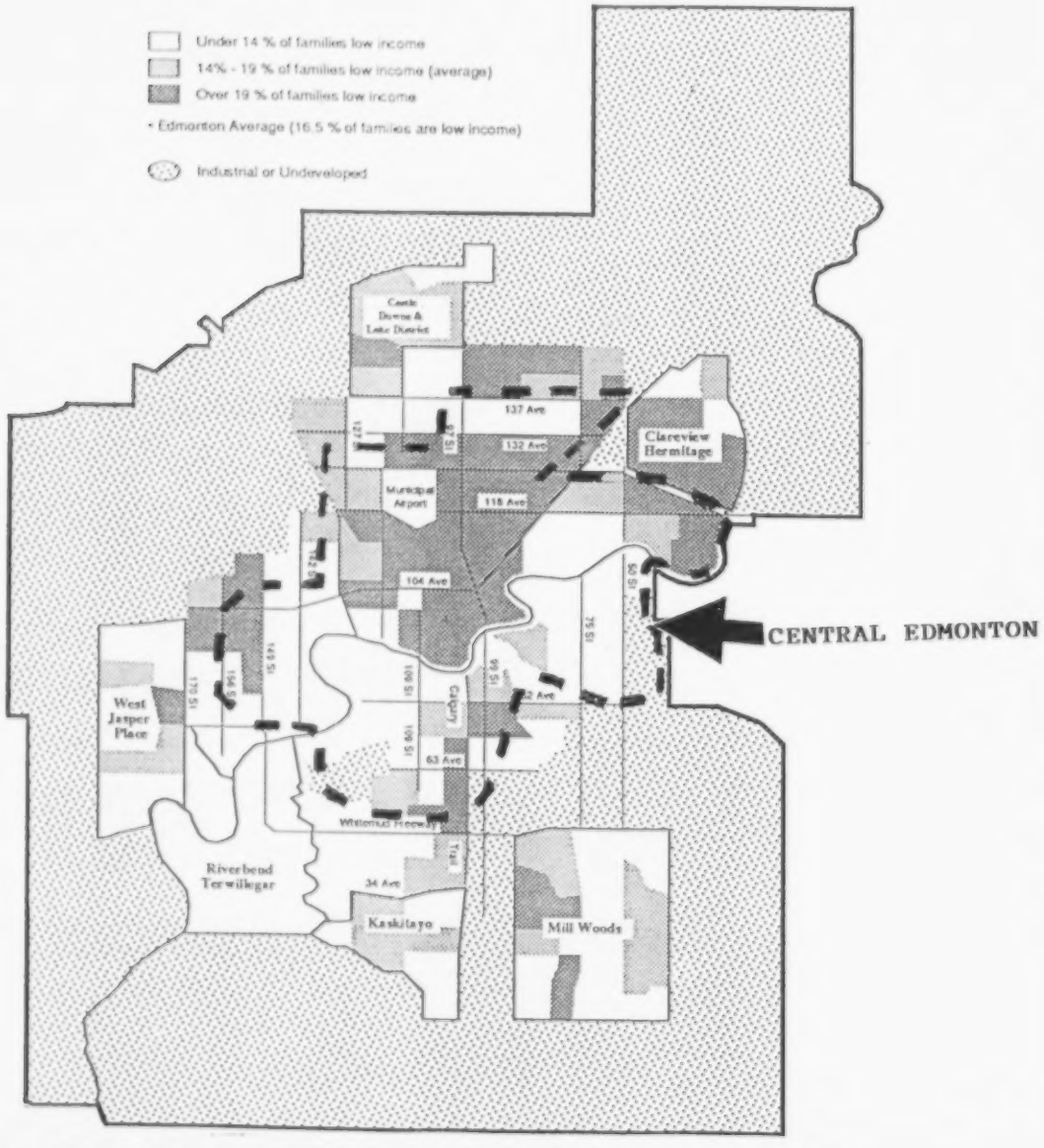
Unemployment Rates in Edmonton (1986)



Source: Edmonton Community Trends Working Group 1989,9

Figure 4.7

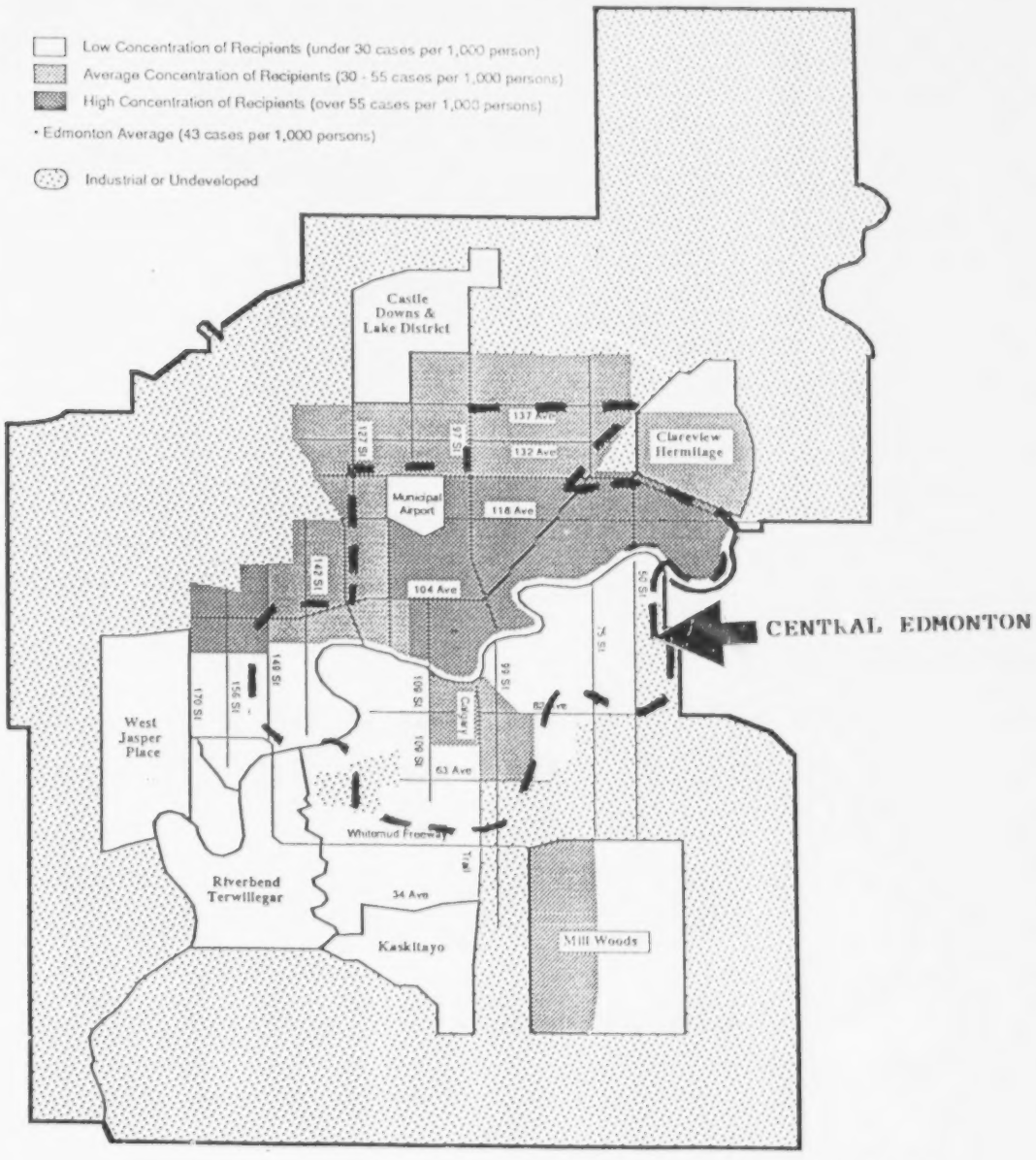
Incidence of Low Family Income in Edmonton (1986)



Source: Edmonton Community Trends Working Group 1989,12

Figure 4.8

Social Assistance Cases in Edmonton (June, 1988)



Source: Edmonton Community Trends Working Group 1989,14.

CHAPTER FIVE

SURVEY METHODS

5. Introduction

To obtain primary data for the study, a survey was conducted using the residents of the Community Housing Program in Edmonton as the population universe. This chapter documents the nature of the questionnaire used, and outlines the sampling procedure, sample size, and the administration of the questionnaire. The statistical procedures employed for the data analysis are discussed in Appendix 1.

5.1 The Questionnaire

On the basis of the research objectives, hypotheses and the literature reviewed, a draft questionnaire was prepared and discussed with the thesis advisory committee and the key members of some poverty and low income agencies in Edmonton.

Specific discussants included: Mr. Jonathan Murphy, the Executive Director of the Edmonton Social Planning Council; Dr. Rudolf Hoehn and Ms. Alice Lueng, both of the Policy Development Unit of Alberta Family and Social Services; and Mr. Kent Fletcher (General Manager) and Ms. Cynthia Hanley (Director of Property Management) of the Edmonton Housing Authority. Most of these discussions included Dr. R.G. Ironside, the thesis supervisor. After a series of alterations and reorganizations, the questionnaire was submitted to the

Department of Geography's Ethics Committee for its formal approval.

To have some idea of the amount of time needed to complete a single questionnaire in the field, and to assist in deciding upon a better wording for questions in the final version of the questionnaire, a "pretest survey" was conducted. Six draft questionnaires were administered in housing projects in central and southern Edmonton. It was found that it took between 50 and 75 minutes to administer a single questionnaire. No major changes were warranted as a result of the pretest. Since no comparable survey on the research topic had previously been conducted in the city, the pretest served as a significant guide for the main survey, particularly in planning the financial and temporal aspects of the study.

To facilitate data analysis, the 78 questions that constituted the questionnaire (Appendix 2) were grouped under three main sections. The first--which was subdivided into two parts--sought information on employment characteristics and spatial constraints in the labour market. The first part (of section 1) concentrated on respondents who were employed, while the second part dealt with the space-related constraints faced by job-seekers in their attempts to enter the labour market. Questions probing the role of personal networks in accessing jobs in the city were also asked in this section.

The second major section gathered information on

respondents' places of residence. On a scale of 1 (very dissatisfied) to 5 (very satisfied), they were asked to indicate their contentment, or otherwise, with the transportation facilities, crime levels, and job opportunities in the city. Information on their perceptions of the causes of poverty and unemployment was also sought in this penultimate section. The data derived from this section, together with the insights obtained from other sections of the questionnaire, were utilized to explore the policy implications of the study.

The final section dealt with the social, economic and demographic characteristics of respondents. Information on age, sex, educational background, income levels and ethnic identity were sought. This section provided background information on the respondents, and assisted in establishing the nexus between spatial constraints and socio-economic characteristics of respondents.

Some questions in this section, especially those on personal income, age and educational background were "sensitive". For respondents to feel comfortable, they were given categories of responses to choose from so that they could avoid specific details. The standard rationale for reserving these "sensitive" questions for the very end of the questionnaire applies: In case a respondent felt uncomfortable and terminated the interview, much relevant information would already have been obtained.

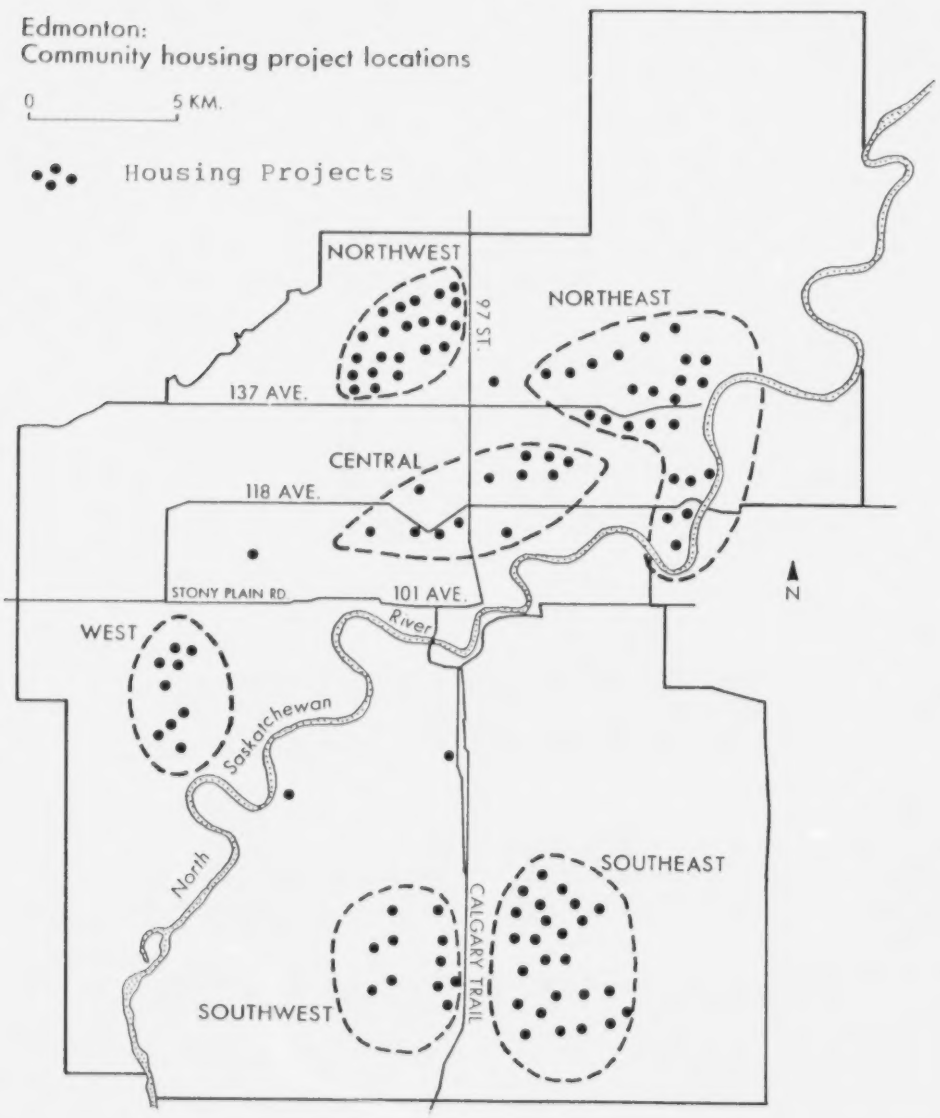
5.2 Sampling Design and Field Interviews

A multistage cluster sampling technique (Sheskin 1985, Henry 1990) was adopted for the survey. In the first stage of this procedure, the Community Housing Projects were grouped under six main clusters--Northeast, Northwest, West, Central, Southeast and Southwest (Figure 5.1). The second phase entailed the selection of four clusters (Northwest to represent the entire North; West; Central; and Southwest to represent the entire North) on the basis of a purposive sampling taking cognizance of the research objectives, time and monetary constraints, personal judgement and expert opinion solicited from the Edmonton Housing Authority and members of the thesis advisory committee (Figure 5.2).

The only two clusters dropped were the Southeast and Northeast clusters. It was envisaged that the two main spatial qualities that the Southeast cluster had to offer the study--its southern location, and the fact that it is a relatively new residential area--were catered for by including the Southwest and Northwest clusters respectively.

Though the bulk of the city's poor reside in communities north of the North Saskatchewan River (Chapter 4) the Northeast cluster was dropped because the Housing projects within this cluster are spatially distant from one another, thereby compromising the very essence of cluster sampling, namely, the reduction of travel cost in data collection. The West cluster, in particular, was selected to help examine the

Figure 5.1



Source: Edmonton Housing Authority (1990)

Figure 5.2

Source: Edmonton Housing Authority (1990).

possible impact of the West Edmonton Mall on job-related travel patterns and behaviours of the respondents. The inclusion of the Edmonton Central cluster was to assist in assessing the differences in the spatial constraints faced by the Central city poor and their suburban counterparts.

The Multistage Cluster Sampling adopted for the study was subject to some standard errors due to the decrease in independent selection in the sample--sampling units included in the sample were determined by the selection of the clusters. The loss of independent information from each sampling unit brought a loss of precision (Stuart 1984, 63; Jolliffe 1986, 47-48). Nonetheless, the procedure was very useful in the absence of a comprehensive sampling frame; the list of the residents of the housing projects was not obtainable due to "confidentiality". In addition, there was the compensating advantage of a far lower cost of data collection since housing units in the selected clusters were close to one another.

An appropriate sample size was determined on the basis of cost and time limitations, and the necessity to provide information with an acceptable level of accuracy for the population. As in many social science surveys, the study was conducted under a 95% Confidence level and a ±5% Confidence interval. Following Sheskin (1985), a sample size of 384 was decided upon for the survey. To ensure a significant number of cases from each cluster, the total sample size was divided

equally, 96 each, among the four selected clusters.

Rather than drawing the expected sample of 96 respondents from all the housing projects within the selected clusters, the study concentrated upon specific projects predetermined on the basis of their locations and number of housing units. The rationale here was to reduce the cost and time of data collection as much as possible. The selected housing projects (in each cluster) together with their respective number of housing units, are summarized in Appendix 3.

A random sample dubbed "Hit two, miss one" was devised to identify specific housing units to be "interviewed" for the study. The technique was simple: starting from a corner of the housing project (usually the most accessible houses to the entrance used by the interviewer), two housing units were selected consecutively, after which the next house was intentionally avoided. When the occupants of a selected unit were unavailable or unwilling to participate, efforts were still made to get two respondents from subsequent units before "missing/avoiding" the next unit.

This method was employed so that as many housing units as possible would be contacted in each project, knowing very well that some may refuse to participate in the survey. The procedure proved to be manageable and successful. At each of the selected houses, a single questionnaire was administered. Prospective respondents who were literate and preferred to fill in the questionnaire to be picked up at a negotiated

time, were encouraged to do so. Only 22 respondents completed questionnaires in this way.

The administration of the questionnaire lasted from October 1991 to January 1992. Though the addresses offered by the Edmonton Housing Authority were reliable, the identification of some of the housing projects proved difficult. Most of the housing projects are located in neighborhoods with complicated curvilinear street plans. Compounding the problem were the extreme winter conditions that started in early October 1991. There were days when fieldwork was not possible because of the weather. However, the survey also benefitted from the severe winter: most people were at home during the primarily evening visits--boosting the response rate.

A total of 420 households was contacted by the end of the survey. Some of households contacted refused, outright, to participate; others collected the questionnaire to fill out at their own convenience, for later 'pick up' (some of whom did not keep the promise: they either lost the questionnaire or never got the time to attend to it).

A total of 286 useable questionnaires was obtained (instead of the expected 384). This represents a response rate of 68%. Thirteen questionnaires were not useable. The breakdown of respondents by clusters is shown in Table 5.1.

Table 5.1

RESPONDENTS BY PLACE OF RESIDENCE/CLUSTER

Place	Frequency	Percent
CENTRAL	88	30.8 %
WEST	70	24.5 %
SOUTH	70	24.5 %
NORTH	58	20.3 %
Total	286	100.0%

Source: Field work conducted from October 1991 to January 1992.

5.3 Representativeness of the Sample

Survey returns are frequently fraught with failures and problems. Individuals selected to be interviewed may refuse to respond or may respond only to parts of the questionnaire, and some may intentionally lie in their responses. While these shortcomings are difficult to correct, we must ensure that the selected sample closely reflects the composition of its population. As McGrew and Monroe (1993, 95) pointed out, a central goal of sampling is to derive a representative set of values from a population. The important question, then, is: To what extent is the present sample representative of the low income people of Edmonton? Unfortunately there is no way of knowing with absolute certainty whether or not a sample is representative of a parent population (Griffith and Amrhein

1991, 47; McGrew and Monroe 1993, 95).

In this section, an attempt is made to examine the representativeness of the sample by comparing some of its characteristics with a 1990 survey of low income[3] households conducted by the Edmonton Food Policy Council (EFPC). The EFPC study--**Community Food Needs Assessment**--is the most comprehensive recent study on low income people in Edmonton (at least, to the knowledge of the present writer). The study was co-ordinated by Dr. Kathryn W. Olson to examine the barriers to food security amongst Edmonton's low income people.

The Edmonton Food Policy Council's (EFPC) study gathered information from 460 low income Edmonton households from all parts of the city. The target population was **low income families with children under 18, and single persons.** The sample was made up of three groups: (a) residents of subsidized housing, (b) low income people identified through referrals from social service agencies and (c) low income people contacted through random telephone interviews. Awareness of these attributes of the Edmonton Food Policy Council's (EFPC) survey is invaluable to an understanding of the comparison that follows.

The present survey produced a sample of 286 persons, of which 53.5% were females. Table 5.2 compares the sex

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[3] Following Statistics Canada, the Food Policy Council defines low income people as those who spend more than 58.5% of their income on food, clothing, and shelter.

composition of the sample with that of the Edmonton Food Policy Council's study. While both studies had more female respondents than males, there were far more women captured by the EFPC's study. The index of dissimilarity (discussed in Appendix 1) of 24.8 indicates that about a quarter of the sample would have to be moved to a different category to make it identical with the EFPC study.

This disparity is, however, understandable since the EFPC's study targeted low income persons who were single and had children under 18. As discussed in Chapter 4, women constitute a far greater proportion of single parents in the province. It is estimated that more than a third of the total Social Allowance caseload in Alberta is made up of single parent households, of which 96% are headed by women (Alberta Family and Social Services, Annual Report, 1988-89). Though corresponding data for Edmonton are not available, the situation is not much different since the Edmonton region serves the highest number of Social Allowance clients in the

Table 5.2

SEX OF RESPONDENTS, EFPC'S STUDY AND SAMPLE

Sex	EFPC's Study	Sample
Male	22.2%	46.5%
Female	77.8%	53.5%

Index of Dissimilarity (Id) = 24.8[4]

[4] The index represents the proportion of the sample that will have to be moved to a different category to make the distributions identical. The calculation of the id is treated in Appendix 1.

province (Alberta Family and Social Service 1989). While there are more poor women than men (Chapter 4), any attempt to capture single low income persons will invariably be biased towards poor women.

Table 5.3 compares the marital status of the two samples. While the percentages of married respondents in both samples were lower than the corresponding figure for the general Edmonton population (51.1%), according to the 1990 Civic Census, the EFPC's sample has a far lower proportion of married people. Then, again, the EFPC's study targeted singles.

The number of people in respondents' households, for both surveys, are shown in Table 5.4. High proportions of respondents in both surveys had household sizes of less than 5 persons. The percentage of respondents within household

Table 5.3
MARITAL STATUS, EFPC's STUDY AND SAMPLE

Marital Status	EFPC's Study	Sample
Single*	32.0%	14.9%
Married	20.1%	39.1%
Common-Law	6.8%	10.0%
Divorced	17.1%	17.6%
Separated	17.1%	11.1%
Widowed	6.6%	7.3%
Total Applicable	457	261

*Those who have never married. Index of Dissimilarity = 23.25.

Table 5.4

HOUSEHOLD SIZE, EFPC'S STUDY AND SAMPLE

Size	EFPC's Study	Sample
1 person	25.2%	19.4%
2 persons	21.7%	16.4%
3 persons	24.1%	27.9%
4 persons	15.2%	27.2%
5 persons	8.9%	5.9%
More than 5 persons	4.9%	3.2%
Mean household size	2.6	2.4
Total applicable (N)	460	268

Index of dissimilarity = 15.8

sizes of "5 persons" and "more than 5 persons" were less than 10% in each case. The mean household sizes were 2.60 for the EFPC's study and 2.4 for the sample. The index of dissimilarity suggests that about 16% of the households would have to be moved to different categories to make the two samples identical. Table 5.5 shows the number of children under 18 years in both samples. The index of dissimilarity (7.55) suggests a close similarity between the EFPC's study and the sample.

The data for some important variables were either not available or not comparable at all. Others were comparable only at an aggregated level. For example, while the EFPC's

study focused on the work status of the entire household (number of workers in a household), the present study concentrated on the work status of the individual respondents (number of respondents who were employed).

Table 5.5

CHILDREN UNDER 18 YEARS, EFPC's STUDY AND SAMPLE

Children under 18	EFPC's Study	Sample
No child	37.8%	33.1%
1 child	20.7%	23.9%
2 children	22.2%	20.2%
3 children	13.3%	15.4%
4 children	5.0%	4.1%
More than 4 children	1.1	3.3%
Total applicable (N)	460	272

Index of dissimilarity = 7.55.

Regarding household income, age of respondents and years of schooling, the available data from the EFPC's were aggregated as shown in Table 5.6. The sample closely matches the EFPC's study on these variables. The average years of schooling are about the same, the difference between the average ages of respondents is only three years, and the disparity between the mean annual household incomes of the two surveys is also minimal (Table 5.6).

While it is impossible to know exactly how well a sample

represents its parent population (Griffith and Amrhein 1991), the comparison pursued here suggests that the present sample closely matches the EFPC's sample, and can therefore be considered representative of Edmonton's low income people.

Table 5.6

AGE, EDUCATION AND HOUSEHOLD INCOME: EFPC's STUDY AND SAMPLE

Variable	EFPC's Study	Sample
Average age of respondents	36 years	39 years
Average years of schooling	11.5 years	11.0 years
Mean Annual Household Income	$13,570.33	$14,532.48

CHAPTER SIX

DESCRIPTIVE OVERVIEW OF RESPONDENTS

6. Introduction

This chapter provides a more detailed descriptive profile of the survey respondents than the discussion above of the representativeness of the sample. In addition to setting the stage for the testing of the research hypotheses (Chapter 7), it highlights some of the differences and similarities existing between the sample and the general Edmonton population.

6.1 Family structure and demographics

As noted in Chapter 5, the survey produced a sample of 286 persons, of which 53.5% were females. The sex breakdown by places of residence is given in Table 6.1. The most apparent revelation is that females were more often respondents, than males, in all neighborhoods except the North. The majority of the respondents were within the age groups of 20-34 years (37.5%) and 35-49 years (37.9%). Very few, 1.1%, were 65 years or older. There were no major differences between the sexes in their age distribution except that all the respondents who refused to offer their ages were women.

The age structure of the respondents varied across neighborhoods. More than half (57.1%) of the Central city respondents were within the age group of 20-34 years compared with 34.5% in the North, 31.1% in the South and only 21.2% in

the West. Conversely, fewer members of the 50-64 year age group lived in Central Edmonton. The older the respondent, the less the likelihood of living in the inner city (Table 6.2).

Table 6.1

SEX OF RESPONDENTS BY PLACES OF RESIDENCE

	Males	Females	Row Total
North	33 56.9%	25 43.1%	58 20.3%
South	29 41.4%	41 58.6%	70 24.5%
West	32 45.7%	38 54.3%	70 24.5%
Central	39 44.3%	49 55.7%	88 30.8%
Column total	133 46.5%	153 53.3%	286 100.0%

Source: Field work, October 1991 to January 1992.

Table 6.2

AGE OF RESPONDENTS BY PLACES OF RESIDENCE (n = 269)

Places	20-34	35-49	50-64	Over 64	Total
North	20 34.5%	23 39.7%	12 20.7%	3 5.1%	58 21.6%
South	19 31.1%	28 45.9%	14 23.0%	0	61 22.7%
West	14 21.2%	32 48.5%	20 30.3%	0	66 24.5%
Central	48 57.1%	19 22.6%	17 20.2%	0	84 31.2%
Column total	101 37.5%	102 37.9%	63 23.4%	3 1.1%	269 100.0%

Source: Field work, October 1991 to January 1992.

The study found that as many as 24.6% of the respondents had between Grade 9 and Grade 12 education without certificate; and 11.2% had less than Grade 9 level of education. Indeed, 2.2% of them had no formal educational background whatsoever. Only 13.0% of the respondents had university education, with or without degrees (Table 6.3). According to the 1986 national census, 10.24% of the entire Edmonton population (15 years and older) had less than Grade 9 education and 23.4% had university education, with or without degrees. This suggests that the low income people have relatively lower educational qualifications.

Table 6.3

EDUCATIONAL LEVELS OF RESPONDENTS (n = 276)

Educational level	Frequency	Percent
No formal eduction	6	2.2%
Less than Grade 9	31	11.2%
Grade 9 to 12 without certificate	68	24.6%
Grade 9 to 12 with certificate	72	26.1%
Trade certificate/diploma	52	18.8%
Other non-university education	11	4.0%
University without degree	10	3.6%
University with degree	26	9.4%

Source: Field work, October 1991 to January 1992.

A comparison by gender showed that the women respondents had better educational backgrounds than the men. For instance, while 13.7% of the women had university degrees, only 4.6% of the men had a similar level of education. Moreover, 7.5% of the females had other non-university education but none of the male respondents were in this category (Table 6.4).

Table 6.4

EDUCATIONAL LEVELS BY SEX OF RESPONDENTS (n = 276)

Educational level	Male	Female
No formal education	0	6 (4.1)*
Less than Grade 9	22 (16.9)	9 (6.2)
Grade 9-12 without certificate	28 (21.5)	40 (27.5)
Grade 9-12 with certificate	29 (22.3)	43 (29.5)
Trade certificate/diploma	41 (31.5)	11 (7.5)
Other non-university	0	11 (7.5)
University without degree	4 (3.1)	6 (4.1)
University with degree	6 (4.6)	20 (13.7)
Column total	130 (47.1)	146 (52.9)

*Column percentages are in parentheses.

A reliable gender breakdown of the educational levels of the general Edmonton population is not available, and it is hard to establish the precise relationship between gender and educational qualifications in the city. However, the 1986 national census indicates that while men constitute 49.1% of the total population (15 years and over) they make up 53.7% of Edmontonians with postsecondary qualifications. This is not

the case for male respondents from the survey, as stated above.

6.2 Economic Characteristics

Of the 286 individuals interviewed, 43.0% and 18.5% were employed full- and part-time respectively. The rest, 38.5%, were not working at the time of the survey. Table 6.5 documents the reasons for unemployment[5]. Most of the

Table 6.5

RESPONDENTS' REASONS FOR NOT WORKING PRESENTLY (n = 109)

Reason	Frequency	Percent
Cannot find work	40	36.7%
Laid off	20	18.3%
Returning to school	15	13.8%
Family responsibilities	9	8.2%
Lack of education/skill	9	8.2%
Health problems	8	7.5%
Transportation problems	3	2.8%
Other problems	5	4.6%

Source: Field work, October 1991 to January 1992.

[5]"Unemployment" here refers to being out of work (or not employed) at the time of the survey, and therefore includes those who are out of work but not actively seeking work. This is different from the official definition of unemployment, which denotes being out of work and actively seeking work.

unemployed respondents, 55% could not find work or have been laid off, while others (13.8%) had left the work force to return to school. The data suggest that the bulk of the unemployed were employable. The sex breakdown for the reasons for unemployment is discussed in Chapter 7, where we explore the relationships between gender and job-related spatial constraints.

Table 6.6 compares the employment status of the males and females. It suggests that low-income females fared slightly better than their male counterparts in the city's labour market. For instance, while 41.4% of the males were unemployed, the corresponding figure for the females was 35.9%. Furthermore, 45.8% of the females, as against 39.8% of the males, were employed full-time.

In recent years, unemployment rates for males in Edmonton have been higher than for females, especially among the younger age group of 15-24 years (Edmonton Community Trends Working Group 1991, 8). For instance, in 1990, the unemployment rates for all ages in the labour market were 8.2% for males and 7.6% for females. The corresponding figures among the 15 to 24 year age group were 13.5% for males and 9.4% for females (Statistics Canada 1990 Catalogue No. 71-001). Concerns about recent deteriorating employment situation of low-income males, particularly single employable males, in Edmonton have been raised by Alberta Family and Social Services. It is estimated that more than two-thirds of the

"single employable" welfare caseload in the city is now made up of men (Alberta Family and Social Services 1989, 6).

By far, the highest percentage of unemployed individuals (50.0%) was recorded in the North (Table 6.7). How do we

Table 6.6

EMPLOYMENT STATUS BY SEX OF RESPONDENTS

	Employed		Unemployed	Row total
	Part-time	Full-time		
Male	25 18.8%	53 39.8%	55 41.4%	133 46.5%
Female	28 18.3%	70 45.8%	55 35.9%	153 53.5
Column total	53 18.5%	123 43.0%	110 38.5%	286 100.0%

Source: Field work, October 1991 to January 1992.

Table 6.7

EMPLOYMENT STATUS BY PLACES OF RESIDENCE

	Employed		Unemployed	Row total
	Full-time	Part-time		
North	2 3.4%	27 46.6%	29 50.0%	58 20.3%
South	18 25.7%	27 38.6%	25 35.7%	70 24.5%
West	13 18.6%	34 48.6%	23 32.9%	70 24.5%
Central	20 22.7%	35 39.8%	33 37.5%	88 30.8%
Total	53 18.5%	123 43.0%	110 38.5%	286 100.0%

Source: Field work, October 1991 to January 1992.

account for this high "unemployment" in the North? Does this imply that the North really has fewer employment opportunities? Table 6.1 indicated that the study captured more males than females in the North than anywhere else; and from Table 6.6, we learned that while 35.9% of the females were not employed, the corresponding proportion for the males was 41.4%. Though we cannot make a direct causal relationship between these Tables and the high unemployment in the North, it is reasonable to speculate that the high proportion of male respondents in the North, contributed to its high level of unemployment. Moreover, given the broader definition of unemployment adopted here, it is conceivable that there were employment opportunities in the North but fewer northern residents wanted to work, or had the training required.

The lowest proportion of unemployed respondents (32.9%) resided in the West, followed by the South (35.7%), and Central (37.5%). This suggests (but certainly does not prove) that Western and Southern Edmonton have slightly better employment opportunities for the poor than the North and Central. This is perhaps because West Edmonton Mall and the Calgary Trail are located in Western and Southern Edmonton respectively. As noted in Chapter 4, the Calgary Trail is the fastest growing commercial corridor in the city, and West Edmonton Mall comprising approximately 371,600 meters square of leasable retail and service space and more than 600 shops provides considerable potential for retail and business

service employments (Jackson and Johnson 1991, 226).

Table 6.8 examines the relationship between respondents' places of residence and places of work. Readings across the diagonal indicate that considerable proportions of them work in their neighborhoods of residence, with the largest percentage being recorded in the West (39.5%) followed by the South (37.8%), Central (34.5%), and the North (32.1%).

Table 6.8

WORKPLACE BY PLACE OF RESIDENCE (n = 171)

	R E S I D E N C E				Row
	North	South	West	Central	total
North	9 (32.1)*	4 (8.9)	10 (23.2)	16 (29.0)	39
South	7 (25.0)	17 (37.8)	5 (11.6)	8 (14.5)	37
West	6 (21.4)	7 (15.6)	17 (39.5)	6 (11.0)	36
Central	2 (7.1)	10 (22.2)	6 (14.0)	19 (34.5)	37
East	4 (14.3)	7 (15.5)	5 (11.6)	6 (11.0)	22
Total	28	45	43	55	171

*Column percentages in parentheses.
Source: Field work, October 1991 to January 1992.

The importance of education in determining one's employment status was captured by the survey data as seen from Table 6.9. Respondents' levels of education had some impact on their employment status. According to Table 6.9, more than half of those with Grade 9-12 schooling without certificate, and those with less than Grade 9 education were unemployed.

Only 15.4% of all those with university degrees were unemployed. Ironically, none of those without formal education were unemployed--this is explicable by the smallness of the sample in this category (n=6).

Among other economic characteristics, we have examined the employment status of the respondents and identified their neighborhoods of employment. We have also explored the nexus

Table 6.9

EMPLOYMENT STATUS BY EDUCATIONAL LEVELS (n = 276)

	Employed		Unemployed	Row total
	Part-time	Full-time		
No formal education	3 50.0%*	3 50.0%	0	6
Less than Grade 9	5 16.1%	8 25.8%	18 58.1%	31
Grade 9-12 without certificate	4 5.9%	18 26.5%	46 67.6%	68
Grade 9-12 with certificate	19 26.4%	32 44.4%	21 29.2%	72
Trade certificate/ diploma	10 19.2%	27 51.9%	15 28.8%	52
Other non-university education	0	11 100%	0	11
College/university without degree	6 60.0%	4 40.0%	0	10
Total	53	119	104	276

*Row percentages.
Source: Field work, October 1991 to January 1992.

between respondents' employment status and their educational background. Yet, we have neither provided any analysis of what types of jobs they hold, nor examined their income levels. We pursue these issues in what follows.

The respondents were of diverse employment backgrounds. The common employment included retail (17.1%), personal, household and child care services (14.1%), health and social services (12.3%), and business services and clerical (11.8%). A few respondents were in wholesale trade (0.6%) (Table 6.10).

Table 6.10

EMPLOYMENT OF RESPONDENTS (n = 170)

Type*	Frequency	Percent
Retail	29	17.1%
Business Services and Clerical	20	11.8%
Food/Beverages and Accommodation	16	9.4%
Health and Social Services	21	12.3%
Construction	10	5.9%
Manufacturing	19	11.2%
Personal/Household and Child Care	24	14.1%
Wholesale	1	0.6%
Others	30	17.6%

*The types follow the categories used by the Edmonton Planning and Development Department.

While food/beverages and accommodation, and personal, household and child care services were, by far, dominated by women; the bulk of the construction and manufacturing jobs were held by the men. This suggest some level of occupational segregation amongst the male and female respondents. Much of the work that women do in the labour market mirrors their work in the household and incorporates a significant component of personal services.

Using a Statistics Canada data set, Evans (1991, 178) found that in 1988 the top ten jobs, which accounted for almost three-quarters of working women in Canada, included secretaries, sales clerks, bookkeepers, cashiers, nurses, waitresses, kindergarten and elementary school teachers, receptionists, and office cleaners. Women's concentration in low-wage jobs has been found to be a more important factor than education or work experience in explaining the male-female wage gap in Canada (Ornstein 1983, 30).

The average annual household income, before tax, for all Edmontonians is now around $32,000 to $34,000 (Edmonton Food Policy Council 1991, 5). The fact that the city's poor have **lower** incomes than the rest of the population is self-evident. The question is how much lower is their income. The study found that more than 85% of the respondents had average personal and household incomes of less than $20,000 (Table 6.11). The mean annual personal and household incomes of the respondents were $11,837 and $14,532 respectively. This

suggests that the average household income of the city's poor is less than one half of that of the general Edmonton population. It is not surprising that some 14.0% of the respondents relied "entirely" on social assistance. The study also found that 29.4% of the respondents were receiving various forms of assistance from community-based social organizations such as the Food Bank, the Boyle Street Community Service and the Canadian Native Friendship Center.

Further data analysis revealed considerable income differences between gender groups. Generally, the male respondents had higher personal income than the females even though the former had lower levels of education.

Table 6.11

MEAN ANNUAL PERSONAL & HOUSEHOLD INCOMES (n = 273)

Income Group	PERSONAL		HOUSEHOLD	
	Freq.	%	Freq.	%
Under $5,000	3	1.1%	-	-
$5,000 - $9,999	36	13.2%	4	1.5%
$10,000 - $14,999	131	48.0%	160	58.6%
$15,000 - $19,999	73	26.7%	77	28.2%
$20,000 - $24,999	14	5.1%	15	5.5%
$25,000 - $29,999	15	5.5%	15	5.5%
Over $29,999	1	0.4	2	0.7%

Mean annual personal income = $11,837.94; Mean annual household income = $14,532.48.

While 48.1% of the men had personal incomes of $15,000 or more, the comparable figure for the women was 25.6%. The situation among the general Edmonton population is not much different. In 1986, the percentage of men with personal income of $15,000 or more stood at 62.1% while that of women was only 39.2%, according to the national census.

As is often the case, respondents' educational levels related to their personal income levels. While one in two, and one in three of those without formal education and those with less than Grade 9 education, respectively, had personal incomes of less than $10,000 per annum, none of the respondents with University education (with or without degree) belonged to this minimal income category. The data further showed that no individual with Grade 9 to 12 education with certificate had personal income of less than $10,000 per year. However, as many as 14.7% of all those with Grade 9 to 12 education without certificate had such low incomes.

The total household incomes for married respondents were higher than "single" respondents. The data revealed that none of the "singles" had total household income greater or equal to $20,000 per annum, while as many as 38.3% of the married individuals were within the $20,000 or more household income category. The majority of those divorced, 71.8%, had total household incomes ranging from $10,000 to $25,000 per annum. These findings parallel those of the Edmonton Community Trends Working Group (1989, 11) which found that while the incidence

of low income (defined as families that spend at least 57.5% of their income on food, shelter and clothing) among two-parent families was only 11.2% in 1985, the comparable figures for "single mother families" and "single father families" were 47.7% and 21.1% respectively.

6.3 Ethnicity

To the open-ended question: "How would you describe your ethnic identity?", a wide variety of responses was recorded--creating some taxonomical difficulties. A basic problem is establishing a set of ethnic categories that is neither too coarse-grained nor too fine-grained. On the one hand, broad ethnic categories such as "Blacks", "Whites" and "Indians" are far too coarse-grained to allow for distinguishing between, for example, "Blacks" from Africa, Latin America and the Caribbean. On the other hand, ethnic groupings on the basis of countries of origin are too fine-grained. They produce virtually an "infinite" number of gradations, thereby hindering meaningful scientific analysis.

Using the Statistics Canada Ethnic Grouping for 1986, and the answers provided by the respondents as a guide, ten broad ethnic groupings were devised (Table 6.12). All those who did not fit these categories were termed the "unclassifiables". The most prevalent ethnic groups included British origin (13.8%); French origin (13.8%); and Asian and Pacific Islanders (13.0%). Only a small proportion, 5.6%, of the respondents were Native Indians (Table 6.12). Several

respondents were uncomfortable about the ethnicity question and refused to answer.

Table 6.12

ETHNIC BACKGROUND OF RESPONDENTS (n = 231)

Ethnic Grouping	Frequency	Percent
British Origin	32	13.8%
French Origin	32	13.8%
Other Europeans	21	9.1%
Caribbeans	26	11.5%
Asians/Pacific Islanders	30	13.0%
Africans	21	9.1%
North and South Americans	16	6.9%
Native Indians	13	5.6%
Australian Origin	7	3.0%
"Unclassifiables	33	14.2%

Source: Field work, October 1991 to January 1992.

This chapter has examined the social, economic and demographic background of the respondents. Attempts were made to compare the characteristics of the respondents with those of the general Edmonton population. Some systematic differences and similarities were found. In addition to having lower levels of education than the general population, the respondents had a relatively smaller proportion of married individuals. Like the general population, however, it was

found that families with two parents do better economically than single parent families. Also, female respondents were found to engage primarily in employment activities that mirror their work in the household.

CHAPTER SEVEN

SIGNIFICANT RELATIONSHIPS: TESTING OF RESEARCH HYPOTHESES

7 Introduction

Having provided a descriptive overview of the survey's respondents in the previous chapter, we examine the relationships between significant variables in this chapter. Specifically, we undertake an empirical assessment of the three research hypotheses--the Suburbanization Hypothesis, the Spatial Mismatch Hypothesis, and the Females' Shorter Work Trip Hypothesis. Data necessary for testing the suburbanization hypothesis, in particular, are derived from secondary sources, while the rest of the data set emanates from the field survey. The chapter is organized in two major parts. The first focuses on the three main research hypotheses while the second examines the relative importance of major explanatory variables through a multivariate approach.

7.1 HYPOTHESIS #1: The Suburbanization Hypothesis

The suburbanization hypothesis is a critical entry point for any in-depth analysis of the spatial mismatch hypothesis. The present section attempts to test the suburbanization hypothesis empirically, rather than assume it a priori. The suburbanization hypothesis addresses the composite research question of:

(a) Whether or not there is actually a continued suburbanization of employment and population; and

(b) Whether or not this has resulted in a highly

deconcentrated urban form in Edmonton.

Considerable insight into the suburbanization hypothesis in the context of Edmonton, has already been provided in Chapter 4. It was observed that there were a total of 267,837 jobs in Edmonton in 1984 out of which 207,095 or 77% were in central Edmonton. By 1990, however, the number of central Edmonton jobs had increased by a meagre 3.9%, while those in suburban Edmonton had risen by as much as 40.2%. The net gains in employment between 1984 and 1990 were 8,155 for central Edmonton and 24,408 for suburban Edmonton. We observed that between 1976 and 1990, central Edmonton lost a population of 53,734 or 13%; at the same time suburban Edmonton's population increased by 350%.

While these statistics shed some light on the first half of the composite question posed by the suburbanization hypothesis, the second half remains unclear. More empirical analysis is, therefore, required.

Two simple regression models, in which the "rate of employment growth" and the "rate of population growth", in Edmonton's traffic districts are regressed against "the distance from the CBD" (independent variable), are employed for further examination of the suburbanization hypothesis. The "distances from the CBD" are estimated as straight line distances from the centre of the CBD to the centre of the respective traffic districts, in kilometers. These regression models are similar to those used by Bourne (1989) in his

discussion of new urban forms in Canada.

We must note that the temporal dimensions of the two models are uneven due to data limitations. While the employment data set covers 1984 and 1990, the population figures relate to 1981 and 1991. Moreover, four suburban traffic districts--Meadows (21), Daon 80 (24), Heritage Valley East (25), and Heritage Valley West (26)--were dropped from the simple regression analyses since their percentage changes in employment and population were "undefined", in the sense that divisions of integers by a zero occurred in their computations.

The underlying logic of these similar simple regression models is straightforward: The rates of both population and employment growth are expected to increase with distance from the CBD if the suburbanization hypothesis is to hold any substance for Edmonton. From the statistical perspective, the models are expected to yield correlation coefficients, r-values, with positive signs. Two sets of Null and Research hypotheses are formulated in accordance with the composite question posed by the suburbanization hypothesis for empirical testing:

(a) $H_{0(a)}$: There is no relationship between the rates of employment/population growth and distance from the CBD ($r = 0$).

$H_{1(a)}$: There is a positive correlation between the rates of employment/population growth and distance from

the CBD ($r > 0$).

(b) $H_{O(b)}$: The process of suburbanization has not resulted in a significant deconcentration of Edmonton's spatial structure.

$H_{1(b)}$: There has been a significant spatial deconcentration as a result of employment and population suburbanization.

The results of the simple regression model with "Percentage Change in Employment" as the dependent variable and "Distance from the CBD" as the independent variable are summarized in Table 7.1.

The results indicate a positive correlation coefficient of 0.23 between the two variables. The positive direction of association is consistent with the suburbanization hypothesis. It suggests that the rate of employment change in Edmonton increases with distance from the city centre. The first null hypothesis ($H_{O(a)}$) of "no relationship" is therefore rejected ($r > 0.$). However, the r-value of 0.23 was not significant at the 0.05 significance level and a degree of freedom of 24 (N-2) using a one-tailed t-test. This implies that the employment suburbanization in Edmonton has not resulted in a significant spatial restructuring or deconcentration, and that the second null hypothesis cannot be rejected.

Indeed, when the initial level of employment was controlled to reduce the impact of the huge outlier of 920.4% change for traffic district number 27 (Table 7.1), the result

Table 7.1

EDMONTON TRAFFIC DISTRICTS: A SIMPLE REGRESSION OF "PERCENTAGE CHANGE IN EMPLOYMENT ON "DISTANCE FROM THE CBD" 1984-1990

Traffic District	Employment 1984	1990	% Change	Dist. from CBD (km)
1	63000	63950	1.5%	-----
2	13640	18350	34.5%	1.89
3	12173	12950	6.5%	4.50
5	14746	14250	-3.4%	5.44
8	24029	24700	2.3%	3.75
9	8223	5550	33.5%	6.18
10	8961	9400	4.9%	7.31
11	3850	5200	35.1%	6.75
13	9368	10100	7.8%	4.68
14	19320	20100	4.0%	4.50
22	29785	30700	3.1%	2.06
Central total	207095	215250	3.9%	-----
4	654	1100	68.2%	9.37
6	4839	10900	125.2%	9.37
12	1931	3050	58.0%	10.12
15	3378	8350	147.2%	9.56
18	1864	3500	88.0%	9.93
19	233	550	136.0%	10.68
21	0	150	*	11.62
23	2765	5350	93.5%	7.68
24	0	200	*	14.25
25	0	50	*	13.68
26	0	50	*	14.43
27	49	500	920.4%	13.68
7	22849	26000	13.8%	7.87
16	5550	8050	45.0%	8.62
17	4394	4550	3.5%	9.37
20	7328	7800	6.4%	7.87
28	1178	1200	1.9%	12.75
29	295	300	1.7%	18.56
30	982	1000	1.8%	17.06
31	2453	2500	1.9%	12.56
Suburb total	60742	85150	40.2%	---
City total	267837	300400	12.2	---

Notes: a) N = 26 (number of districts entered into the regression).
b) r = 0.23 (not significant at 0.05 using t-test).
c) * = Undefined; division by zero occurred in computation.

Source: Computed from the City of Edmonton, Transportation Department, 1985; and 1990.

was not different. The coefficients of determination and correlation were 0.09 and 0.30 respectively-- still not significant at 0.05 significance level.

The results of the second regression model using "percentage change in population" as the dependent variable and "distance from the CBD" as the independent variable are reported in Table 7.2 below. As with the first model, the direction of association between the two variables is positive with a correlation coefficient (r) of 0.12.

The rate of population growth, like that of employment growth, increases directly with distance from the city centre--thereby rejecting the first Null hypothesis. Again, at the 0.05 significance level and a degree of freedom of 28 (N-2), the r-value was not reliably different from zero, using a one-tailed t-test. This implies that the second null hypothesis cannot be rejected. Again, when the initial level of population was controlled to minimize the effect of the huge outliers (3900% for traffic district 19 and 1516.2% for traffic district 21 in Table 7.2), the results remained virtually the same, with coefficients of determination and correlation of 0.05 and 0.23 respectively.

While the regression results suggest that some degree of suburbanization is taking place in Edmonton, the assertion that a drastically dispersed urban form has emerged cannot be substantiated. Both r-values were positive, yet too small to be significantly different from zero. The distinction between

Table 7.2
EDMONTON TRAFFIC DISTRICTS: A SIMPLE REGRESSION OF "PERCENTAGE CHANGE IN POPULATION" ON "DISTANCE FROM CBD" 1981-1991

Traffic District	Population 1981	Population 1991	% Change	Dist. from CBD (km.)
1	7057	6500	-7.8%	---
2	17897	19500	8.9%	1.87
3	32800	30900	-5.8%	4.50
5	60173	57000	-5.3%	5.44
8	43484	40300	-7.3%	3.75
9	24263	21500	-11.4%	6.18
10	51756	50800	-1.8%	7.31
11	26843	26300	-2.0%	6.75
13	36244	30600	-15.6%	4.68
14	21072	20400	-3.2%	4.50
22	42942	47300	10.1%	2.06
Central total	364521	351100	3.7%	---
4	6608	15800	139.1%	9.37
6	28877	49100	70.0%	9.37
12	19684	29500	49.9%	10.12
15	43988	75600	71.9%	9.56
18	22171	33400	50.6%	9.93
19	205	8200	3900.0%	10.68
21	99	1600	1516.2%	11.62
23	34412	41500	20.6%	7.68
24	300	500	66.7%	14.25
25	197	300	52.3%	13.68
26	197	200	1.5%	14.43
27	699	700	0.1%	13.68
7	296	200	-32.4%	7.87
16	57	0	-100.0%	8.62
17	201	200	-0.5%	9.37
20	2064	2100	1.7%	7.87
28	2201	2200	-0.01%	12.75
29	698	500	-28.4%	18.56
30	3001	2500	-16.7%	17.06
31	101	100	-1.0%	12.56
Suburb total	166056	264200	59.1%	---
City total	530587	615300	84713	---

Notes: a) N = 30 (Number of districts in the regression)
b) r = 0.12 (Not significant at 0.05, using t-test)

Source: Computed from The City of Edmonton Planning and Development Department, 1988; and 1990.

(absolute) numerical strength and (relative) growth rates is important here: While Edmonton's suburbs have higher growth rates in both population and employment, central Edmonton still has the bulk of the available employment and population. For example, in 1990 total employment in central Edmonton was 215,250 compared with 85,150 in suburban Edmonton, a ratio of 2.5:1 in favour of the former. Suburban Edmonton is gaining more population (than employment), yet the majority of the city's residents still live in central Edmonton. Therefore, what appears to be a "dramatic" growth in suburban population needs to be interpreted with caution.

7.2 HYPOTHESIS #2: The Spatial Mismatch Hypothesis

In the preceding section, we discussed and tested the suburbanization hypothesis. The findings suggest that some level of suburbanization, albeit minimal, is taking place in Edmonton. What is the connection of these findings to the spatial mismatch hypothesis? Do we really need a drastic or accelerating suburbanization in order to test the mismatch thesis?

Arguably, since the study in general, and the mismatch hypothesis in particular, are concerned with the job-related spatial constraints faced by Edmonton's poor within a fixed time (later 1991 and early 1992), it is enough to establish that there was a substantial number of jobs and population in suburban Edmonton during that time; and this has been demonstrated in the preceding section and in Chapter 4.

As noted in Chapter 2, the spatial mismatch hypothesis originated with Kain's seminal paper in 1968, where he contended that housing market segregation in the United States affected the distribution of black employment and reduced job opportunities open to them. The kernel of Kain's argument is that blacks trapped in inner-cities would find it difficult to reach the suburban employment locations where jobs were growing fastest. Kain's argument does not have to be restricted to blacks, it may apply to other deprived groups--notably, women, and the urban poor (certainly, these groups are not mutually exclusive).

The main concern of the present study is to test whether suburbanization in Edmonton has had a greater adverse impact on the inner city low-income population than the suburban poor. Thus, the employment suburbanization in the city improved upon the employment opportunities and activities of the suburban poor, relative to their inner city counterparts. The spatial mismatch hypothesis specified here will be supported if low-income people living in central Edmonton are found to have significantly more severe job-related spatial constraints than their suburban counterparts.

7.2.1 Journey to Work Characteristics of Respondents

For a better appreciation of the spatial constraints faced by the city's poor in the job market, we need to have some knowledge of their journey to work characteristics. How do they normally travel to work? What modes of transportation

do they usually use for their work trips? and What are the conditions, in terms of road worthiness, of their private means of transportation? Answers to these questions are necessary for a better understanding of the spatial mismatch hypothesis.

As observed in the previous chapter, 43.0% of the interviewees were employed full-time and 18.5% were working part-time at the time of the survey. To gain more insight into respondents' journey to work patterns, they were asked to indicate the mode of transportation they normally used to get to and from work. The majority of the applicable respondents (61.5%) relied on the public bus/LRT system, 24.7% used their own automobile while some 6.0% usually walked to and from work (Table 7.3). Slightly more women than men relied on the public

Table 7.3

MODE OF TRANSPORTATION USED TO GET TO WORK (n=166)

Mode	Frequency	Percent
Bus/LRT	102	61.5%
Personal automobile	41	24.7%
Walk	10	6.0%
Car pool/ride	6	3.6%
Taxi	4	2.4%
Motorbike	3	1.8%

Source: Field work, October 1991 to January 1992.

transit system--the ratio was 65:58. A greater percentage of those relying on the bus/LRT system, 42.0%, did so because of lower cost and convenience. Not unexpectedly, one in every three of those who depended on the public transit system for

their work trips had no other means of transportation. They represented what Rutherford and Wekerle (1988) termed captive riders.

Asking what problems, if any, respondents faced in travelling to and from work, brought a variety of responses which are summarized in Table 7.4. Heading the list at 23.0% was "fear of being late/destination too far". Other problems mentioned included the severe winter conditions, 19.2% (it may be recalled that the survey was conducted in the winter); traffic congestion and confusion, 11.8%; and frequent automobile breakdown, 9.6%. Some respondents, albeit a smaller number (3.0%), reported being afraid to walk home at night (Table 7.4).

Table 7.4

JOURNEY TO WORK PROBLEMS OF RESPONDENTS (n = 135)

Problem	Freq.	Percent
Fear of being late/destination too far	31	23.0%
Weather too cold	26	19.2%
Traffic congestion and confusion	16	11.8%
Frequent automobile breakdown	13	9.6%
Bus/LRT transfer problems	11	8.1%
Too tired to walk home	6	4.4%
Afraid to walk home at night	4	3.0%
Other problems	28	20.7%

Source: Field work, October 1991 to January 1992.

More than half of the respondents, 62.9%, owned private means of transportation--the majority, 91.1%, owned either a car or truck, while some 6.6% had motorbikes. Table 7.5 shows the present condition or road worthiness of respondents' automobile. There is little, if any, doubt that the ownership of a reliable private automobile was a restricted possibility among them. Only one-third of the applicable respondents indicated that their automobiles were in either "good" or "very good" condition.

The preceding sketch gives some background on the commuting of the respondents. Light has also been shed on the mode of transportation commonly used by the respondents for their journey to work. In the following pages, we wish to test the spatial mismatch hypothesis by establishing the empirical relationships between respondents' places of residence and the spatial constraints they encounter in the city's labour market.

Table 7.5

CONDITION OF PRIVATE MEANS OF TRANSPORTATION (n=173)

Condition	Frequency	Percent
Very good	14	8.1%
Good	35	20.2%
Fair	55	31.8%
Poor	66	38.3%
Don't know	3	1.7%

Source: Field work, October 1991 to January 1992.

7.2.2 Journey to Work Distance (in Kilometers)

Table 7.6 shows the approximate distance (respondents' own estimates) between respondents' homes and their workplaces. A considerable proportion of the applicable respondents, 31.9%, had journey to work distances ranging between 5 and 10 kilometers and only 13.4% of them travelled between 16 and 20 kilometers to get to work (Table 7.6).

Table 7.6

APPROXIMATE DISTANCE FROM RESPONDENTS' HOME TO WORK (n=119)

Distance* (km)	Frequency	Percent
Less than 5 km	32	26.9%
5 - 10 km	38	31.9%
11 - 15 km	33	27.7%
16 - 20 km	16	13.4%

* One-way distance.
Source: Field work, October 1991 to January 1992.

Table 7.7 summarizes the results of a Chi-square test of independence on the spatial mismatch hypothesis with the null hypothesis (H_o) that: There is no significant difference in the work trip distance frequency distribution by places of residence. To generate a more robust Chi-square result, some of the original distance categories listed in Table 7.6 were recoded and coalesced. Specifically, the two categories of "11 to 15 kilometers " and "16 and 20 kilometers" were combined. This reorganization eliminated the empty cells in the "Place of residence" by "Journey to work distance" crosstabulation, and ensured that there were no cells with expected frequencies

fewer than 5.

Readings across the independent variable (Places of residence) in Table 7.7 indicate that the highest proportion of applicable respondents within the longest distance category of "Over 10 kilometers" resided in central Edmonton, followed by the South, North and West in that order. Within the shorter distance categories of "Less than 5 kilometers" and "5 to 10 kilometers, however, central Edmonton ranks third and last respectively (Table 7.7).

Table 7.7

CHI-SQUARE TEST RESULTS: Null hypothesis that there is no difference in work trip distances by places of residence

	Journey to work distances (km)			
	< 5km	5 - 10km	Over 10km	Total
North	7 (38.9)*	6 (33.3)	5 (27.8)	18
	4.84e	5.75	7.41	
South	7 (17.9)	12 (30.8)	20 (51.3)	39
	10.49e	12.45	16.06	
West	10 (38.5)	12 (46.2)	4 (15.3)	26
	6.99e	8.30	10.70	
Central	8 (22.2)	8 (22.2)	20 (55.6)	36
	9.68e	11.49	14.82	
Total	32	38	49	119

*Row percentages in parentheses; e = expected frequencies.
Chi-square = 14.19; df = 6; $p < 0.05$; Cramer's V = 0.24417.

The table suggests (but does not prove) that the residents of West Edmonton had relatively better physical access to employment than their counterparts in other neighbourhoods. The possible impact of West Edmonton Mall in

this regard cannot be discounted. The Chi-square test result shows a statistically significant difference between work trip distances, on the basis of places of residence. The null hypothesis (H_o) of no difference, is therefore rejected (X^2= 14.19; df = 6, $p < 0.05$).

Table 7.8 shows the result of a similar Chi-Square analysis, comparing the journey to work distances of central city respondents with those of all suburban respondents combined. Greater proportions of suburban respondents belong to lower distance categories, while the reverse is true for the central city respondents. The Chi-Square test confirms the spatial mismatch hypothesis, rejecting the Null Hypothesis of no difference between the journey to work distances of central and suburban respondents ($X^2 = 9.49$; df = 3, $p < 0.05$).

Table 7.8

CHI-SQUARE TEST RESULTS: Null hypothesis that the work trip distances of central Edmonton respondents are not different from those of suburban Edmonton respondents

	Journey to work distance (km)				
	< 5km	5-10	11-15	Over 15	Total
Suburbs	24	30	26	3	83
	(28.9)*	(36.1)	(31.30)	(3.60)	
	22.31e	26.50	23.02	11.16	
Central	8	8	7	13	36
	(22.2)	(22.2)	(19.4)	(36.1)	
	9.68	11.49	9.98	4.84	
Total	32	38	33	16	119

*Row percentages in parentheses; e = expected frequencies; Chi-square = 22.92; df = 3; $p < 0.05$; Cramer's V = 0.4388.

7.2.3 Journey to Work Time (in minutes)

Table 7.9 documents the approximate journey to work time of respondents. Ninety-five percent of all those working outside their homes had work trip times of less than one hour. One in three of the applicable respondents spent 16 minutes or less to get to work. The study observed that the respondents had better knowledge of their work trip time than they had of their work trip distances.

Table 7.9

APPROXIMATE JOURNEY TO WORK TIME OF RESPONDENTS (n= 161)

Time	Frequency	Percent
Less than 16 minutes	55	34.2%
16-30 minutes	44	27.3%
31-60 minutes	55	34.3%
Over 60 minutes	7	4.3%

Source: Field work, October 1991 to January 1992.

Table 7.10 provides the result of a Chi-square analysis on the relationship between "place of residence" (independent variable), and "journey to work time" (dependent variable). According to the table, the greatest proportion of respondents whose work trip times exceeded 30 minutes resided in central Edmonton followed by the South, West, and the North in that order. Regarding the shortest time category of less than 16 minutes, however, central Edmonton has the lowest percentage.

Table 7.10

CHI-SQUARE TEST RESULTS: Null hypothesis that the amount of time spent on the journey to work is not different amongst respondents from different neighbourhoods

	Journey to work time (minutes)			
	< 16	16-30	Over 30	Total
North	9 (32.1)*	14 (50.0)	5 (17.9)	28
	9.56e	7.67	10.78	
South	14 (35.9)	11 (28.2)	14 (35.9)	39
	13.32	10.66	15.02	
West	18 (46.2)	8 (20.5)	13 (33.3)	39
	13.32	10.66	15.02	
Central	14 (25.5)	11 (20.0)	30 (54.5)	55
	18.79	15.03	21.18	
Total	55	44	62	161

*Row percentages in parentheses; e = expected frequencies; Chi-square = 17.00; df = 6; $p < 0.05$; Cramer's V = 0.22977.

At the alpha level of 0.05 and a degree of freedom of 6, the Chi-square test rejected the null hypothesis that journey to work times of respondents were the same, irrespective of their places of residence. The test results show that respondents' journey to work times are reliably contingent upon in which part of the city they reside.

Table 7.11 sums up the results of a similar Chi-square analysis performed at a macro-analytical level, comparing the journey to work times of central city respondents with those of all suburban respondents combined. While 54.5% of the central Edmonton respondents travelled for more than 30 minutes to get to work daily, the comparable figure for

suburban residents was 32.2%. The situation is however reversed within the shortest commuting time category of "less than 16 minutes" (Table 7.11).

Table 7.11

CHI-SQUARE TEST RESULTS: Null hypothesis that the amount of time spent on the journey to work by central Edmonton respondents is not different from that spent by suburban respondents

	Journey to work time (minutes)			
	<16 min.	16-30	Over 30	Total
Suburbs	41 (38.7)*	33 (31.1)	32 (32.2)	106
	36.21e	28.97	40.82	
Central	14 (25.5)	11 (20.0)	30 (54.5)	55
	18.79	15.03	21.18	
Total	55	44	62	161

*Row percentages in parentheses; e = expected frequencies; Chi-square = 9.06; df = 2; $p < 0.05$; Cramer's V = 0.2370.

Again, the Chi-square test confirmed that journey to work times of central Edmonton respondents were, indeed, longer than those of suburban residents ($X^2 = 9.06$, df = 2, $p < 0.05$). The strength of the relationship between the independent variable (Places of residence) and the dependent variable (Journey to work time) was about the same at both the micro- and micro-analytical level, as depicted by the Cramer's V.

These empirical tests support the hypothesis that both journey to work distance and time depend on place of residence; and that low-income residents in central Edmonton travel longer distances and take more time to get to work.

What can be said, however, about the amount of money spent on journey to work by residents of different neighbourhoods?

7.2.4 Journey to Work Cost (in Dollars)

The vast majority of the applicable respondents, 71.7%, spent between $21 and $40 to cover their journey to work each month while 8.2% spent less than $20. Few, 18.2%, individuals spent between $41 and $60, and fewer still, 1.9%, spent between $61 to $80 for their work trip per month (Table 7.12). At the time of the survey, the monthly bus/LRT pass for adults in the city cost $40. The table reflects the high level of dependence on public transit system, on the part of respondents.

Table 7.12

AMOUNT OF MONEY SPENT ON WORK TRIP PER MONTH (n = 159)

Amount	Frequency	Percent
Less than $20	13	8.2%
$21 - $40	114	71.7%
$41 - $60	29	18.2%
$61 - $80	3	1.9%

Source: Field work, October 1991 to January 1992.

The amount of money spent on journey to work was found to be a weak measure, ambiguous in capturing the concept of spatial constraints since the monthly bus/LRT fare in Edmonton, as in many cities, is not based on distance travelled. It is contended that any attempt to rely heavily on travel cost, measured in dollars, in assessing spatial constraints is filled with serious practical problems.

7.2.5 Job Search Characteristics and Spatial Constraints

The data analysis presented in the preceding section has demonstrated that consistent, reasonable and statistically significant relationships exist between respondents' places of residence and their journey to work times and distances. The findings were compatible with the spatial mismatch hypothesis. Central city residents travelled longer distances than their suburban counterparts to get to work. A key consideration 'missing' from the discussion, so far, is: To what extent are the job search activities of the unemployed respondents affected by space-related restrictions? Obviously, the effects of spatial mismatch between job locations and places of residence are felt not only by those employed, but also by those who are searching for jobs. This section explores the space-time constraints of job seekers, to provide a broader perspective of the spatial mismatch hypothesis.

The reasons why some respondents were not employed have been discussed in Chapter 6. Regarding the duration of unemployment, the data indicated that one half of all unemployed respondents had been out of work for eight or more months; only 12.7% had an unemployment spell of less than 4 months. It also came to light that the greatest proportion of respondents with the longest unemployment duration of eight or more months lived in the North of the city (32.8%). This was followed by the Central (22.7%), South (17.1%), and West (5.7%) in that order. This finding is consistent with an

earlier revelation in this chapter: southern and western Edmonton appear to have slightly better employment opportunities than the other neighborhoods studied.

The most prevalent reasons for being unemployed included: family and child care responsibilities, health problems, schooling and job training activities. To the question "Are you currently looking for work?", some 64.5% of the applicable respondents answered in the affirmative. Even amongst those unemployed and looking for jobs, some preferred part-time to full-time work due to problems relating to child care, health and job training activities.

Respondents' usual sources of job information included newspapers, employment and placement centers and social contacts. Approximately two in every three of the job seekers had relatives, friends or social organizations that were assisting them in their job searches. The type of assistance received was varied, but the provision of job information accounted for almost 42.3% of the applicable cases. Next, one in four had received help regarding résumé preparation and interview skills. Some 9.6% reported "receiving ride" for their job searches while 5.8% received financial support from their friends, relatives and social organizations.

On the question of whether or not those who were searching for jobs had learned of any job vacancies through social contact over the last year or so, 62.0% responded yes, while 20.3% answered negatively. The rest could not recall.

The study revealed that some 18.5% of all the respondents were involved in job training and upgrading programs as of the time of the survey. These programs included the Alberta Employment Skills Program, the Alberta Training Program, the Alberta Employment Alternative Program and other private job-training programs. As expected, some 43.4% of those participating in these programs expressed concerns about the "uncertainties of getting secure jobs after their training". Other concerns raised included the fact that the programs were "too time-consuming" (15.1%), "difficulties of finding reliable and affordable child care facilities during the course of the program" (11.2%), and the "high cost of transportation" (5.6%).

As with the employed respondents, the bulk of those looking for work, 43.6%, relied primarily on the public transit system for their job search trips. Some 30.9% used their own cars/trucks, while 19.7%, and 5.6% relied on "rides" and motorbikes respectively. The willingness, on the part of job seekers, to accept job offers in any part of the city was another significant piece of information sought by the survey. Nearly 70% of those looking for work were ready to accept jobs in all parts of Edmonton. The highest percentage of those who were willing to work in all parts of the city lived in the North (67%) and Central (65%), followed by the West (60%) and South (35%). It seems, residents in these two places, sensing the apparent harsh realities of their

employment opportunities were more prepared to work in all parts of the city.

The priorities and weighted values of problems faced by the unemployed respondents in their job search are presented in Table 7.13. The weighted value for each problem category was assigned by multiplying the first-rank frequency (column 1) by three, the second-rank frequency (column 2) by two, and the third-rank frequency (column 3) by unity. A similar procedure was used by Smith (1987) to rank ten regions of Britain on the basis of five social and economic indicators.

Several observations might be made from the table. First, the most worrisome problem was the high cost of searching for jobs--considered the most important problem by 11 job seekers, the second most important problem by 23, and the third most important by another 11. Other high pressing problems with their weighted values were difficulties in finding "good-paying" jobs (70), and difficulties in finding a job in one's field (69). Transportation problems turned out to be the fourth most important concern among job seekers, with the weight of 66 (it is conceivable that some of those who mentioned high cost of job search as a problem were, in fact, referring to transportation cost as well). Transportation problems were the most common first-rank problem by job seekers.

Most job seekers would have financial difficulties in patronizing the "efficient" public transit system in the city

for their job search. Very few respondents mentioned the problem of discrimination, on the part of the employers, as the most important problem. However, it was second to only transportation problems, as a third-rank problem.

Table 7.13

THE 3 BASIC JOB SEARCH PROBLEMS BY RANK AND WEIGHT

PROBLEM	R A N K 1ST	2ND	3RD	WEIGHT
High cost of searching	11	23	11	90
Difficulties in finding good-paying jobs	11	14	9	70
Difficulties in finding a job in one's field	6	22	7	69
Transportation problems	16	2	14	66
Language problems	13	6	7	58
Unfavourable job schedules	14	0	11	53
Discrimination by employers	7	4	13	42
Other problems	0	4	0	8

Source: Field work, October 1991 to January 1992.

7.3 HYPOTHESIS # 3: "The females' shorter work trip hypothesis"

Gender relations infiltrate the job-related spatial constraints faced by the urban poor. These relations are critical to our understanding of gender-based disparities in employment activities. The combined effect of gender and class places poor women in a difficult position as they engage in activities tied to the urban labour market. Women constitute

the bulk of the poor. The feminization of poverty is a consequence of several factors including low wage rates, part-time work, and lack of security of employment in many 'female' jobs (Yeates 1990).

Given the allocation of roles and the resulting inequalities, there are grounds to expect gender differences in the job-related spatial constraints faced by the urban poor. Studies have shown that women's work trips are shorter than men's (Madden 1981, Singell and Lillydahl 1986). However, very little analysis has been made to examine the extent to which this finding holds in the exclusive case of the urban poor. Using the survey data, an attempt is made to investigate the gender differences in journey to work and job search patterns of the urban poor. The discussion is carried out in two major parts: The first segment is devoted to the empirical testing of the "females' shorter work trip hypothesis" while the second explores other related spatial constraints faced by the respondents in the Edmonton labour market, as an attempt to explore possible explanations for the observed gender differences in work trip and job search characteristics.

In the previous section it was observed that higher proportions of women, than men, depended on the public transit system for their journey to work. One in every three of those who relied on the bus/LRT system for their journey to work claimed they had no other means of transportation, that is they were "Captive riders". It is worth adding that nearly two

thirds, 63.3%, of the "captive riders" were women.

Table 7.14 shows that there is considerable gender difference in work trip distances. For instance, while more males are within the longer distance categories of "11 to 15 kilometers" and "16 to 20 kilometers", the opposite is true for the females. The Chi-square test of independence rejected the null hypothesis (H_o) of no significant difference in journey to work distance on the basis of sex (X^2=25.02, df = 3, $p < 0.05$).

Table 7.14

CHI-SQUARE TEST RESULTS: Null hypothesis that there is no significant differences between male's and female's journey to work distances

	Journey to work distance (km)				
	< 5km	5-10	11-15	16-20	Total
Male	8 (14.5)*	11 (20.0)	24 (43.6)	12 (21.8)	55
	14.79e	17.56	15.25	7.39	
Female	24 (37.5)	27 (42.2)	9 (14.1)	4 (6.2)	64
	17.21	20.43	17.75	8.6	
Total	32	38	33	16	119

*Row percentages in parentheses; e = expected frequencies; Chi-square = 25.02; df = 3; $p < 0.05$; Cramer's V = 0.4585.

The Chi-square test was robust enough, since there were neither empty cells nor cells with expected frequencies fewer than five. A Cramer's V of 0.4585 suggests that 45% of the variations in journey to work distance is explicable on the basis of the respondents' sex.

The result of a similar Chi-square test, using work trip

time measured in minutes, is summarized in Table 7.15. While 48.9% of the applicable women travelled for less than 16 minutes to get to work, the corresponding figure for the men was 16.4%. Conversely, while 53.4% of the men travelled for more than 30 minutes to get to work, only 26.1% of the women had similar work trip times. The Chi-square test proved significant in rejecting the null hypothesis--X^2 = 20.38, df = 2, $p < 0.05$).

Table 7.15

CHI-SQUARE TEST RESULTS: Null hypothesis that there is no significant gender difference in work trip time

	Journey to work time (minutes)			
	<16 min	16-30	Over 30	Total
Male	12 (16.4)*	22 (30.1)	39 (53.4)	73
	24.93e	19.95	28.11	
Female	43 (48.9)	22 (25.0)	23 (26.1)	88
	30.06	24.04	33.89	
Total	55	44	62	161

*Row percentages in parentheses; e = expected frequencies; Chi-square = 20.38; df = 2; $p < 0.05$; Cramer's V = 0.3558.

The preceding analysis demonstrates that there are gender differences in commuting time and distance. This implies that the "females' shorter work trip hypothesis" holds even amongst the urban poor. The question then is: How do we account for the observed differences? In what follows, key related problems encountered by the respondents in the Edmonton labour market are examined to shed some light on this question.

7.3.1 Related Spatial Problems

For an in-depth insight into the gender differences in space-related restrictions upon the employment activities of the respondents, the data on "journey to work problems" were disaggregated on the basis of sex. It was revealed that all four persons who were afraid to walk home at night, as well as the eleven respondents who had bus/LRT transfer problems were women. Besides this observation, there were few differences between the male and female respondents in their work trip problems.

The reasons for unemployment, however, differed considerably between the sexes as shown in Table 7.16. First, even though men constitute a greater proportion of those who were unemployed as a result of poor education and skill levels they make up a smaller percentage of those returning to school. Indeed available data show that more Edmonton women, than men, enrolled in university continuing education courses in 1988-89, 1989-90 and 1990-91 academic years (Statistics Canada 1992, Cat. No. 81-002).

Second, all those who cited family responsibility as the reason for their unemployment were women. This parallels several prior studies which revealed that females' employment pursuits are severely curtailed by household and child care activities (Hanson and Johnston 1985, Singell and Lillydahl 1986). The table also indicates that more men than women were

laid off, with a ratio of approximately 6:1.

These findings corroborate the Canadian Advisory Board on the Status of Women's (1990) assertion that while male poverty is usually directly tied to the working of the labour market--through inadequate education/skills and lack of good-paying jobs--female poverty is mostly attributed to the interplay of such factors as women's unique role as mothers and homemakers. A Chi-square test was not applicable to the table since several cells had expected frequencies fewer than five.

Table 7.16

REASONS FOR UNEMPLOYMENT BY SEX OF RESPONDENTS (n = 109)

Reason	Male	Female	Row total
Cannot find work	17 (42.5)*	23 (57.5)	40
Laid off	17 (85.0)	3 (15.0)	20
Returning to school	4 (26.7)	11 (73.3)	15
Family responsibilities	0	9 (100.0)	9
Lack of education/skills	7 (77.8)	2 (22.2)	9
Health problems	4 (50.0)	4 (50.0)	8
Transportation problems	3 (100.0)	0	3
Other problems	3	2	5

*Row percentages in parentheses.

Some 15.5% and 35.2% of all those who were searching for work at the time of the survey devoted approximately "5 to 10 hours" and "Over 10 hours" per week respectively to their job

search activities. The majority of the job seekers, 36.6%, reported that they did not know the amount of time they spent on their job search while the rest did not offer any response.

Asked to indicate whether or not they had enough time to conduct their job searches, 84.1% of the applicable males and 28.6% of the applicable females responded in the affirmative (Table 7.17). A Chi-square analysis revealed that men had significantly more time for their job search than women (X^2 = 15.81, df = 1, $p < 0.05$). The reasons for having inadequate time for job search differed between the sexes. While most of the men (four in seven) had insufficient time as a result of health reasons, all of the women mentioned family and child care responsibilities for their limited time for job search.

Table 7.17

WHETHER OR NOT RESPONDENTS HAD ENOUGH TIME FOR JOB SEARCH BY SEX (n = 58)

	Yes	No	Row total
Male	37 (84.1)* 31.10e	7 (15.9) 12.89	44
Female	4 (28.6) 9.89	10 (71.6) 4.10	14
Total	41	17	58

*Row percentages in parentheses; e = expected frequencies; Chi-square = 15.81; df = 1; $p < 0.05$; Cramer's V = 0.5220 (Note: One cell has e less than 5, making the test weak).

To the question: Would you prefer a full-time job if one were available?, 3.1% of the applicable males responded negatively. The comparable figure for the females was 51.9%.

The reasons for not preferring full- to part-time jobs, again, varied on the basis of sex. All the applicable men cited health reasons and all the women mentioned household-related concerns for not preferring a full-time to a part-time job, even if one were offered.

Table 7.18 reflects the preparedness of respondents to accept job offers in any part of the city. The fact that more men were ready to work irrespective of the job location within the city is very conspicuous--the ratio was 94:52 in favour of the male respondents. In addition to being statistically significant ($p < 0.05$), the strength of the association between "sex" (Independent variable) and "preparedness to accept jobs in all parts of the city" (dependent variable) came out reasonably strong with a Cramer's V of 0.4904 (Table 7.18). The only reason given by applicable respondents as to why they were unwilling to accept job offers in all parts of the city related to transportation problems. Evidently, difficulties of reaching employment locations imposed costs on the urban poor, high enough to discourage them from participating fully in the work force.

Asked to indicate whether or not the level of crime in the city affected their job search activities, some 21 respondents answered positively. Of these, the greater proportion, 14 or 66.6%, were men. However, when given a scale of 1 to 5 (1 being very dissatisfied) to express their satisfaction, or otherwise, with the level of crime in the

city, the proportions dissatisfied (calculated as a percentage of those who chose either 1 or 2 on the scale) were equal for both sexes--20.3% each.

A straightforward interpretation of this finding is not easy. Ceteris paribus, one would expect more women than men to be affected by the perceived levels of crime in the city. Anyhow, the Chi-square test in each case, could not reject the null hypothesis of no difference amongst the sexes. One thing is apparent, though: the job search activities of some of the respondents were affected by the perceived level of crime in the city; and one in every five of the respondents was dissatisfied with the level of crime in the city. As a female respondent observed: "You can see some weird things down here that leave you scared...When I walk home at night [from work] I don't dare take the back alleys."

Table 7.18

PREPAREDNESS TO ACCEPT JOB OFFERS IN ALL PARTS OF THE CITY BY SEX OF RESPONDENTS (n 79)

	Yes	No	Row total
Male	45 (93.7)* 37.06e	3 (6.3) 10.94	48
Female	16 (51.6) 23.93	15 (48.4) 7.06	31
Total	61	18	79

*Row percentages in parentheses; e = expected frequencies; Chi-square = 19.02; df = 1; $p < 0.05$; Cramer's V = 0.4906.

The preceding discussion indicates that the female respondents worked closer to home than the males. More women

than men could not afford to take longer work trips due to their greater household responsibilities and their lower access to private automobiles. Furthermore, a smaller proportion of women had enough time to conduct their job searches than men, and more women preferred part-time to full-time jobs as a result of their household responsibilities.

Arguably, the "gendered" nature of social life forces low income women, in particular, to be very conscious of spatial proximity to employment. These findings suggest that there is a functional relationship between spatial and socio-economic variables in explaining the straitened employment circumstances of the urban poor. Individuals (whether rich or poor) do not enter the work force as economic men and women; they come fully embedded in social processes which are, in turn, influenced by spatial considerations.

7.4 Journey to Work: A Multivariate Analysis

Several important points regarding the journey to work characteristics of respondents emanated from the Chi-Square analyses presented in sections 7.2.1 and 7.3. Of particular interest is the fact that male respondents and central city residents had longer work trip distances than their female and suburban counterparts, respectively. While the Chi-Square analyses offered insights into the process of journey to work, some salient questions concerning the relative importance of explanatory variables remain unanswered.

This section seeks to further strengthen our

understanding of the spatial constraints faced by the city's poor in the labour market by identifying the important explanatory variables for commuting times of respondents. The sections uses the multiple regression technique to explore the possible interaction between socio-economic and geographic variables relating to the journey to work patterns of Edmonton's low income people. Unlike the Chi-Square technique, multiple regression allows for the incorporation of many independent variables in a single model. It also permits a better evaluation of the relative importance of various independent variables in explaining a dependent variable. Many analysts believe that the procedure of multiple regression provides much explanatory power due to its multivariate nature (Aldrich and Nelson, 1984:9).

7.4.1 The Multiple Regression Model

The objective for this modelling is to examine the relative importance of selected social and economic variables in explaining journey to work. The specific question addressed here is:

> What are the relative importance of the selected independent variables when used to predict journey to work time with other variables in a multiple regression equation?

The model presented regresses journey to work time (dependent variable) against seven explanatory variables discussed below.

7.4.2 The Dependent Variable (Journey to Work Time)

While estimates derived from multiple regression analysis may be robust against errors in some assumptions, other assumptions are very crucial and their failure leads to unreasonable estimates. Such is the case when the dependent variable is not a continuous, interval measure (Aldrich and Nelson 1984, 9). With this in mind, the actual "uncategorized" journey to work time reported by respondents was used as the dependent variable. It may be recalled that respondents had better knowledge of their journey to work time than their journey to work physical distance. In addition, the journey to work cost measured in dollars was found to be an ambiguous predictor of spatial constraints.

7.4.3 The Independent Variables

The technique of multiple regression places no restriction on the values that the independent variables take on, except that they should not be the exact linear combination of each other (Aldrich and Nelson 1984, 12). Seven independent variables--two continuous, and five dichotomous--were utilized in the equation. Table 7.19 summarizes the variable labels and their respective descriptions. The choice of these variables for explaining journey to work time was based not only on the literature reviewed in Chapter 2, but also on the empirical analysis carried on in this chapter.

Several methods can be used in developing multiple regression equations including forward variable selection,

backward variable elimination, stepwise variable entry and removal and forced entry. Different regression equations were developed using these procedures, and carefully analyzed. Though there were not many differences regarding the explanatory power of the different models, the "forced entry model" was selected for analysis. With this method (forced entry), no independent variable is eliminated. This allows for a comparative analysis of all independent variables, including those considered insignificant and eliminated by the other methods.

Table 7.19

LIST OF INDEPENDENT VARIABLES IN THE MULTIPLE REGRESSION MODEL

Variable Label	Variable Description
PLACE	Place of residence; coded Central city =1, Suburb = 0.
SEX	Sex of respondents; coded Male = 1, Female = 0.
INCOME	Actual personal income of respondents, in dollars.
CHILD	The presence of a child under 5 years in respondents' household; coded Present = 1, Absent = 0.
EDUCATION	The actual number of years spent in school by respondents.
AGE	Dichotomized age of respondents; coded Over 50 years = 1, Other = 0.
CRIME	Measures respondents dis/satisfaction about the level of crime in the city; coded Satisfied = 1, Dissatisfied = 0.

7.4.4 Relative Importance of Independent Variables

As noted earlier in this section, the multiple regression analysis is aimed at assessing the relative importance of the selected explanatory variables in predicting work trip time. The answer to the specific question being addressed is, however, complicated by the problem of multicollinearity. This problem relates to a situation where the explanatory powers of some independent variables in a multiple regression model are accounted for by other variables in the equation.

Using the concept of "Tolerance", the SPSS package is able to examine the level of multicollinearity. All the independent variables had high Tolerance, close to unity in each case. This indicates that the impact of multicollinearity is minimal. In fact, no independent variable in the model had more than 21% of its explanatory power accounted for by other variables in the model.

With the help of the b-values, we can compare the extent to which the dependent variable changes as a result of a unit change in the various independent variables. For instance, the results indicate that a unit change in years of education resulted in as low as 0.382 minutes change in journey to work time. While the b-values shed some light on the relative significance of independent variables, they are scientifically inappropriate since the units of measurements for the independent variables are different. For instance, while INCOME is measured in dollars, EDUCATION is measured in number

of years in school. The need for some form of standardization is obvious.

Against this background, the Beta weights which represent the standardized coefficients of the b-values become the key measures used to evaluate the relative importance of the independent variables. The Beta weights measure the change in dependent variable (measured in standard deviation) that results from a one-standard-deviation change in the independent variable. Beta weights are calculated by multiplying the regression coefficients (b) by the ratio of the standard deviation of the independent variables to the standard deviation of the dependent variable (Nurosis 1985, 39).

The Beta weights provided in Table 7.20 show that the most important explanatory variables in explaining the journey to work time of low-income people were respondents' PLACES of residence (0.219), AGE (0.201), INCOME (0.146), and the presence of a CHILD in respondents' households (-0.122) in that order. Even though the SEX, EDUCATION, AND CRIME variables had reasonable directions of association with the dependent variable, their relative explanatory powers in the model were small.

The directions of association between the dependent variable and most of the independent variables were consistent with **a priori** expectations.

Table 7.20

SUMMARY OF MULTIPLE REGRESSION RESULTS

Dependent Variable = Journey to work time in minutes (TIME).

Variables	b	Beta	R	Tolerance	T-scores
PLACE	11.838	0.272	0.219	0.912	4.673*
SEX	1.732	0.043	0.137	0.861	0.718
INCOME	4.661	0.146	0.075	0.884	2.473*
CHILD	-4.957	-0.122	-0.171	0.832	-2.003*
EDUCATION	0.382	0.075	0.055	0.946	1.317
AGE	8.749	0.184	0.201	0.795	2.945*
CRIME	0.958	0.024	-0.026	0.949	0.418

Constant (a) = 2.024; Multiple R = 0.373; * = Sig. at 0.05

For instance, "SEX" and "PLACE" correlated positively with the dependent variable, implying that males and central city respondents had longer journey to work times than their female and suburban counterparts respectively. Also, the directions of association indicate that respondents with "higher incomes" tend to have longer work trip times, as did those with comparatively higher education (Table 7.20).

Table 7.21 shows the correlation matrix of all the variables in the multiple regression model. Though the r-values between the variables are generally low, as can be seen from the Table, they indicate some noteworthy relationships among the variables in the model. For instance, PLACE correlated negatively with AGE, INCOME and CRIME with r-values

of -0.06, -0.22 and -0.18 respectively.

Table 7.21

CORRELATION MATRIX FOR REGRESSION VARIABLES

	TIME	PLACE	SEX	CRIME	AGE	EDUC.	INCOME	CHILD
TIME	1.00	.22	.14	-.03	.20	.06	.08	-.17
PLACE	.22	1.00	-.03	-.18	-.06	.01	-.22	.04
SEX	.14	-0.03	1.00	-.05	.27	.08	-.03	-.01
CRIME	-.03	-.18	-.05	1.00	.06	-.11	-.03	-.01
AGE	.20	-.06	.27	.06	1.00	-.16	-.09	-.37
EDUC.	.06	.01	.03	-.11	-.16	1.00	.14	.09
INCOME	.08	-.22	.16	-.03	-.09	.14	1.00	.09
CHILD	-.17	.04	-.24	-.01	-.37	.09	.09	1.00

This suggests that central Edmonton respondents were younger, had lower incomes and were more dissatisfied about the level of crime in the city, than suburban respondents. Another important association was that between INCOME and EDUCATION: the positive r-value of 0.14 (albeit low) suggests that those with higher education were more likely to have higher incomes. This is a result which accords with conventional wisdom. Also, males were more likely to have higher incomes than their female counterparts, since there was a positive correlation between SEX and INCOME.

The positive correlation of 0.06 between AGE and CRIME is rather hard to explain. It suggests that those over fifty

years of age were more likely to be 'satisfied' with the level of crime in the city. Perhaps this is due to the fact that the bulk of them live outside central Edmonton as shown by the negative association between PLACE and AGE. We must note that dissatisfaction about crime levels in the city was higher among residents of the central Edmonton than residents of other parts of the city, since there was a positive correlation between CRIME and PLACE from Table 7.21.

The preceding multiple regression model has revealed that place of resident is the most important explanatory variable for work trip times. Furthermore, social and economic variables such as age of respondents, presence of a preschool child and income levels were found to correlate reasonably with spatial variables such as journey to work time and place of residence.

7.5. Discussion

What has been learned about the spatial constraints upon the employment opportunities of low income people in Edmonton from all the analyses taken together? Has suburbanization of jobs in the city really led to a serious spatial mismatch between jobs and places of residence of the poor, which has exacerbated the employment difficulties of those living in central Edmonton? Or has Edmonton done such a good job of dispersing its low income housing projects that there is a reasonably good fit between jobs locations and places of residence? In the remainder of this chapter, we will explore

these key questions.

The study found that respondents living in central Edmonton tend to travel longer distances to work and to spend more time on their journey to work than their counterparts in the suburbs. Whether or not the longer commuting distances and times pose real constraints which put central Edmonton residents at a disadvantage over suburban ones is hard to establish.

Under section 7.4.5, the study noted that more central Edmonton job seekers were prepared to accept job offers in all parts of the city than those in the South and West. This may imply that distance and time considerations are not serious constraints in Edmonton, which is a relatively small city, and has not experienced a drastic suburbanization, according to the results of the suburbanization hypothesis tested in this chapter. This line of thinking appears to be supported by Table 7.22 below, which sums up respondents' perceptions on the causes of unemployment. A majority of them, 33.3%, explained the soaring unemployment situation in the city in terms of the economic recession. Other noteworthy responses included: government policies, family responsibilities, inadequate education and skills and weak trade unions (Table 7.22). The most striking feature of the table is the complete lack of "spatial responses" in accounting for the increasing unemployment in Edmonton. Does this imply that spatial considerations are insignificant in dealing with poverty and

unemployment in Edmonton? No.

Table 7.22

PERCEIVED CAUSE OF UNEMPLOYMENT (n = 258)

Cause	Freq.	Percent
Economic recession	86	33.3%
Government policies	21	8.1%
Family responsibilities	18	7.0%
Inadequate education and skills	17	6.6%
Weak trade unions	17	6.6%
Laziness/welfare & U.I.C. too easy to get	16	6.2%
Immigrants taking up more jobs	16	6.2%
Labour becoming too expensive	15	5.8%
Too much automation & machinery	13	5.1%
People do not search well enough	12	4.6%
People are too choosy	10	3.9%
Discrimination against immigrants/minorities	9	3.5%
Many women and youth now working	2	0.8
Other causes	6	2.3%

Source: Field work, October 1991 to January 1992.

The apparent lack of concern for spatial variables can be explained by what Kennedy et al. (1978, 460) described as the "the problem of specificity versus diffuseness". They observed that people tend to be more critical and evaluative at the level of specifics than they are at the general/overall or

diffused level. That is, a general question on the cause of unemployment is bound to yield broad responses, like those presented in Table 7.22. We must recall that when respondents were asked a specific question on their job search difficulties, spatial constraints (i.e., transportation problems) ranked relatively high (in Table 7.13).

A careful synthesis of the study results indicates that not only are central Edmonton residents travelling longer distances and times to get to work than respondents in the suburbs, but also, the former have longer "unemployment spells" than all but residents of northern Edmonton. In addition the percentage of those who were not employed at the time of the survey in central Edmonton ranked second out of the four clusters studied. It is difficult to establish causal relationships between these findings. Nonetheless, taken together, they suggest that at the macro level central Edmonton residents face more severe spatial constraints, which have in turn worsened their employment opportunities compared with the suburban residents. At the micro-level, however, it appears that the job-related spatial constraints faced by central Edmonton residents were not drastically different from those encountered by respondents in the North.

Some of the research findings seem to play down the impact of the spatial mismatch hypothesis in Edmonton, depending on how they are interpreted. In particular, the finding (in section 7.2.5) that about 70% of all job seekers

were prepared to work anywhere in the city appears to suggest that getting around in Edmonton is not as difficult as the spatial mismatch theorists presume. But then, a strong counter-argument can be presented in support of the mismatch hypothesis, using the same finding: Conscious of a severe spatial mismatch between residences and work places, the city's poor should, naturally, be prepared to incur longer commuting trips or endure more unemployment and poverty.

Within the constraints of the available data set, the preceding analysis has shed some light on the role of space in the employment activities of low income people. Using simple and multiple regression techniques and Chi-Square tests, the study has highlighted the geographic problems faced by the poor in the urban labour market. It has also revealed some of the relationships between spatial and aspatial variables, and identified the gender differences in job-related spatial constraints among the poor. In the next chapter, we examine the policy implications of the major relationships identified by the study.

CHAPTER EIGHT

POLICY IMPLICATIONS

8. Introduction

There have been three main schools of thought on policies dealing with spatial mismatch-generated-poverty and unemployment namely: "Dispersed", "Development", and "Mobility" strategies (Kasarda, 1990; Hughes, 1989). The Dispersed strategists seek to decentralize the residence of the urban poor from the inner city to the suburbs while the Developmentalists advocate the "recentralization" of employment and development activities from the suburbs to the inner city (Hughes, 1989:202). The proponents of the Mobility school of thought seek to connect inner city residents to suburban jobs (Hughes, 1989:203).

Rather than taking sides, the approach adopted here is holistic, utilizing useful ideas from all these standpoints regardless of origin or label. Critics may levy the charge of eclecticism against this approach. Nevertheless, so long as the specific policies prescribed are logically consistent with the research findings, then, this criticism may hold little substance. It is argued that the problems of poverty and unemployment are too complicated to be resolved by a single policy paradigm. To be successful, proposed solutions should be comprehensive, tackling all the major relationships identified in the study simultaneously.

8.1 Housing

The results of this study indicate that low-income people living in central Edmonton have longer commuting distances and times than their suburban counterparts. This has a major policy implication: Providing more public housing in the inner-city will only exacerbate the transportation problems their low income occupants. Nonetheless, there is a tendency, on the part of many suburban residents in Edmonton, as in many Canadian cities, towards the "Not In My Back Yard Syndrome" (NIMBY) in finding sites for low-income housing in Edmonton. The NIMBY expresses an increasing public awareness that just about any urban activity carries with it some negative factors including crime, noise and traffic that might disturb quality of life and diminish housing and real estate values. In addition to NIMBY protests, there is a mounting pressure from private developers who insist that the city is distorting the housing market by competing directly with them (an issue debated at a "Brown Bag Forum" organized by the Edmonton Social Planning Council, in February 1992).

Mindful of these neighbourhood dynamics, the study favours the continued building of small scale low-income housing projects which do not concentrate too many poor people into the same neighbourhood. The Edmonton Housing Authority has long made efforts toward implementing this particular policy. In order to minimize the commuting problems of Edmonton's poor population, it would be logical to locate low

income housing projects as close as possible to clusters of workplaces throughout the city. In the words of Herbert Gans:

> The dysfunctions of dispersal may be as bad as those of overconcentration, not because the latter has any virtue, but because, until an effective jobs-and-income-grants program has gone into operation, requiring very poor people to move away from the neighbourly support structures they do have deprive them of their only resources.

As a long-term approach, the three levels of government--federal, provincial and municipal--should team up to provide the poor with sufficient funding to enable them to make their own choice on where and how they want to house themselves. Alternatively, low-income housing residents could be allowed and encouraged to purchase their housing units if they can obtain a small downpayment and pay a portion of their income in monthly mortgage, as is done in many Australian cities (Goldsmith and Blakely 1991, 295).

8.2 Transportation

The study found that the majority of respondents rely on the public transit system for their job-related journeys, reflecting the low ownership of reliable private automobile among respondents. This indicates that any sustainable anti-poverty or anti-unemployment policy package should include some transportation elements.

An additional impetus for transportation policy for the city's poor emanates from the Community Food Needs Assessment Project undertaken by the Edmonton Food Policy Council. The project found that: 'Low income Edmontonians are much more

likely to walk or take a bus to buy groceries compared with the general population" (Edmonton Food Policy Council, 1991:6). Income levels influence **who** uses **what** mode of transportation **where** and **when.** The need to restructure the city's transportation system to cater for the shopping and employment needs of the city's poor cannot be over-emphasized.

Consulting with the low-income people who experience these transportation problems is a crucial first step in developing sustainable solutions. The transportation restructuring process might also include modifying routes, schedules and fares within the city's transit system to reflect the needs of low-income people and poor neighbourhoods.

Presently, the city's bus and light rail transits run at far longer time intervals during weekends. Also, the current peak-hour bus/LRT fare of $1.60 per ride, which may be very cheap for some people, is apparently too high for the city's poor. Any improvement in these directions will enhance the mobility of the captive riders. Without the necessary bus routes, shopping and support programs, suburban life for the poor can turn out to be "...a jail without walls, where 'errant' behaviour is met with some ostracism..." (Murphy 1987, 5).

8.3 Family and Gender Considerations

The study shows that poor women encounter greater job-related spatial restrictions, and are more concerned about

locational and travel conveniences than their male counterparts. Female respondents worked closer to home than males. They could not take longer work trips due to a combination of their household responsibilities and their lower access to private automobiles.

Given what is learned about gender difference in job-related spatial constraints, one can argue that any deterioration in geographic accessibility to jobs--either through a decline of transportation services or through an increase in journey to work travel distances--will have a disproportionate adverse effect on poor women than poor men. We must therefore pay more attention to the spatial entrapment of poor women in the urban labour market. The existing perspectives on increasing feminization of poverty that disregard the role of geography are inadequate.

Public policy should aim at facilitating involvement of fathers in family life. A lot can be learned from Sweden in this respect. The 1974 replacement of the Swedish maternity leave with parental leave--by which either parent can take all or share any part of the nine-month leave from work at 90% pay available to workers upon the birth of a child (Hanson and Hanson 1981, 180)--offers a significant policy guideline for Canada. Furthermore, a nationally set child support system like the Swedish Advance Maintenance Payment for all children with absentee parents is worth looking into in Canada. This policy should entitle all children in single-parent families

to a basic, nationally-set support from absent parents. Children should not be penalized for parents' failure to pay.

If mothers are to work, public policy must ensure the availability of good and affordable child care facilities. One female respondent remarked that: "Finding an affordable child care facility in Edmonton is now a chronic problem rather than an occasional occurrence". Improved subsidies for child care--either by increasing the benefit level of the current child care tax credit and making it refundable, or by increasing the social allowance grant for child care--will relieve some of the burdens on poor families in the work force. Employers may also explore the feasibilities of providing "on-premises" child care facilities for their workers.

8.4 Education and Job-Training

The importance of education was demonstrated by two main findings in this study. Generally, with increased qualifications in education came increased personal income (as revealed by the multiple correlation matrix in Chapter 7) and a reduction in unemployment among respondents. As evidence presented above suggests, however, in the case of females often increased education does not necessarily lead to more employment and higher income. The policy implication is that the problems of poverty and unemployment could be alleviated by enhancing the general educational levels of the poor.

Rather than waiting till the problem of poor education

gets worse in adulthood, the study advocates an increased investment in early childhood educational programmes. Preschool programmes that provide year-round comprehensive education and other child development services (medical, dental, social and nutritional) could help improve the educational attainments of the urban poor.

Establishing scholarships and other incentive programmes with the help of local corporate and social organizations can also encourage youth to enter and continue school. The "miss school miss out programme" in Edmonton (under the auspices of the CFRN Television Station), by which school children are rewarded in kind for improving upon their attendance is commendable. Firms and organizations participating in such programmes could be allowed to make some tax deductions to that effect; this will encourage others to become involved.

Efforts in improving formal schooling amongst the poor should be complemented by a simultaneous provision of job information networks and job-training programmes to prepare prospective workers for the increasing knowledge-intensive work places of the 1990s and beyond. Educational and job training programmes for the poor will have little impact unless there are new enduring jobs at the end of these programmes. The economic health of Edmonton then becomes a significant factor for the success of educational and job-training policies.

Furthermore, because of the greater incidence of poor

education and unemployment among the male respondents, efforts should be made to entice more males into educational programmes. Also, to the extent that some respondents attributed the growing poverty and unemployment to discrimination by employers, effective solutions may require public educational campaigns on the dangers of discrimination in society.

Most of the policy prescriptions offered here may not be cost-effective in the short-run. Nevertheless, long-run gains are inevitable through increased productivity on the part of the poor, and through less public spending on social pathologies that are usually associated with poverty and unemployment.

CHAPTER NINE

SUMMARY AND CONCLUSION

The aim of this final chapter is to provide a cross-cutting summary and conclusion that highlights the study's contribution to geographic scholarship; important areas for further research are suggested as well.

9.1 Summary

The study has examined the space-related constraints faced by the poor in the Edmonton labour market. In the opening chapter, the case for paying special attention to the spatial aspects of poverty and unemployment was developed. The literature review pursued in Chapter 2 had three main tasks. The first was to discuss the concept of poverty, highlighting how it is defined, measured and explained in the Canadian context. It was indicated that poverty cannot be explained exclusively in terms either of individual behaviour or of structural circumstances. Conceding that some people cause their own impoverishment, it was argued that for others poverty may be due to physical or mental impairment, or to structural malfunctioning of society.

The second major task of Chapter 2 was to examine the urban structural changes in Canada. It was demonstrated that the loci of residential and employment growth in many cities are shifting away from inner cities to their suburban and exurban areas. It was argued that the inner city poor are at

a labour market disadvantage because of the dual forces of urban population and employment suburbanization. The controversy surrounding the spatial mismatch hypothesis was also given considerable attention.

The third aim of Chapter 2 was to shed light on how the concepts of space, spatial constraints and employment opportunities are used in this study. Drawing from the works of spatial theorists like Edward Soja, Derek Gregory and Doreen Massey, the concept of space was used to imply more than just physical or geometric space. It was used to embrace the conception of organized space rooted in a social origin and filled with social meaning. The term "employment opportunity" was utilized to denote the circumstances that enhance a person's chances of undertaking activities tied to the labour market.

Chapter 3 concentrated on the research objectives and hypotheses. Three main hypotheses--the suburbanization, the spatial mismatch, and the females' shorter work trip hypotheses--were formulated and discussed in some detail. The characteristic features of the Edmonton Community Housing Programme including ownership, management and eligibility requirements were also brought forth in Chapter 3.

The task of Chapter 4 was to profile the study area. This was done by distinguishing between metropolitan Edmonton and the city of Edmonton, and by providing a background on Edmonton's transportation facilities, labour market, and a

documentation of the nature of poverty in Edmonton.

It was revealed that, as with many other Canadian cities, Edmonton workers face some basic commuting problems including morning and evening rush hour traffic and limited bus services in newly expanding suburban areas. The discussion also noted that the Edmonton labour market is experiencing some changes. This included the expansion of suburban employment, the growth of the service sector, a shortage of construction workers and a general ageing of the city's labour force. As in many cities in Canada, it was noted that the greater proportion of Edmonton's poor is composed of females, Aboriginal people, immigrants, visible minorities and disabled individuals. It was observed that the bulk of the city's poor reside in communities north of the North Saskatchewan River.

Chapter 5 examined the study's techniques and methods by outlining the sampling procedure, sample size, and the design and administration of the questionnaire. The representativeness of the sample was also explored in this chapter.

Chapter 6 provided a descriptive overview of the survey respondents. It revealed that the majority of the respondents had low levels of formal schooling; thus most respondents would fare poorly in any job market. Even though the female respondents were found to have better education, they constituted the majority of those with very low incomes.

The data analysis undertaken in Chapter 7 presented the

strengths and weaknesses of the three key research hypotheses. Although there is an increasing penetration of employment and population into suburban Edmonton, the findings suggest that this has not resulted in a "drastic" deconcentration of Edmonton's spatial structure.

The most clear cut revelation in this study relates to the confirmation of the spatial mismatch hypothesis and the "females' shorter work trip hypothesis". The findings indicated that journey to work distances and times both depended on the respondents' places of residence; and that central city residents travelled longer distances/times than their suburban counterparts to get to work. This may be because of Bourne's observation: "Average commuting distance for the resident labour force has decreased in many new suburban districts around major Canadian cities, largely because of the employment fields that have developed around suburban work locations" (Bourne 1989, 322-323).

There were consistent and statistically reliable gender differences in work trip distances and times. Female respondents travelled shorter distances/times to work than their male counterparts. This parallels the findings of some prior Canadian studies including Cubukgil and Miller (1982), Rutherford and Wekerle (1988) and Villeneuve and Rose (1988), all of whom noted that women work closer to home than men. The study's findings also support an assertion by the Canadian Advisory Board on the Status of Women that while poverty and

unemployment amongst men are directly tied to the working of the labour market, females' poverty and unemployment are mostly attributed to the interplay of such factors as women's role as mothers and homemakers.

Drawing upon ideas from various sources including the "Dispersed", "Development" and "Mobility" strategists as well as from the Swedish welfare system, the case for transportation restructuring, improved education and job-training, more low-income housing and child care facilities for the city's poor has been argued in Chapter 8.

9.2 Contribution to Knowledge

Two of the study's findings taken together make a modest empirical contribution to the basic question of whether there is a strong relationship between "space" and the labour market outcome of the urban poor as analysts like Ellwood (1986) have questioned. First, the study found that low-income residents in Central Edmonton travel longer distances, and take more time to get to work than their suburban counterparts. Second, the multiple regression analysis in Chapter 7 emphasized the importance of PLACE of residence--a strong spatial variable--over SEX, INCOME, EDUCATION, AGE, perceived level of CRIME and the presence of a preschool CHILD in respondents' households in explaining the journey to work TIME of respondents. The role of "space" is salient when concretized in the context of the urban labour market.

It is evident that "space" is an important variable in

explaining the employment circumstances of the urban poor. Interconnections between homes and employment locations can generate differences in the employment opportunities of urban residents. Consequently, reassertion of anti-spatial dogmatism will only serve to slacken the development of comprehensive spatial theories aimed at explaining and alleviating urban poverty.

Other Canadian analysts have examined various forms of the hypotheses tested in this study. However, as rich as such studies are in the insights they provide on the relationships between spatial constraints and employment activities, they did not address the exclusive case of the urban poor. A good case in point is Bourne's (1989) work on the spatial mismatch hypothesis which disregarded the specific situation of the urban poor (or racial minorities or any other disadvantaged group, for that matter)--a group around which the mismatch hypothesis was originally formulated. Again, while some parallels exist between the present study's findings and those of other prior studies, an extensive review of the Canadian literature did not turn up any research that examines the gender differences in job-related spatial constraints of the urban poor. We now know from this study that the "females' shorter work trip hypothesis" holds in the exclusive case of Edmonton's urban poor.

In the past, several studies on gender differences in employment activities have focused on women as a homogenous

group without examining the specific circumstances of poor women. Some analysts are now calling for the reconceptualization of gender studies to incorporate other social divisions such as class and ethnicity (Hanson and Pratt 1991, McDowell 1991). The present study has a significant implication for feminist scholarship in this respect, as it explores circumstances of a group of low-income women in the labour market. The study points to the role of spatial variables in understanding the increasing feminization of poverty.

While it makes no claim to offer definitive explanations and solutions to these problems, the study hopes to shed some light on the connections between spatial constraints and the employment opportunities of the city's poor, as an aid to the planning and implementation of anti-poverty policies. It is believed that the straitened circumstances of the city's poor can be improved upon with some idea of who works where and why.

9.3 Limitations of the Study and Avenues for Future Research

Before bringing the discussion to a close, it is proper to identify the limitations of the study and to speculate on new avenues of geographic research coming from this work. A notable limitation of the study is the use of low income housing residents as a surrogate for the city's poor. Like all operational definitions, this one is not exhaustive and overlooks some segment of the city's poor. In particular, it

neglects the arguably more straitened circumstance of the city's homeless people; any interpretation of the study results needs to be qualified in this regard.

Another limitation relates to the adoption of the planner's definition of central Edmonton for the study. As indicated in Chapter 4, this spatial framework results in a relatively large area for central Edmonton, and blurs the characteristic differences between suburban and central Edmonton. This may have biased the study results, particularly with regards to the suburbanization hypothesis. Conceivably, larger regression coefficients might have been obtained if a smaller inner city was used.

In addition, the sampling technique used in the study has some drawbacks. For instance, the lack of a complete list of the residents of the housing projects and the arbitrary dropping of the Northeast and Southeast clusters from the analysis introduced constraints in the selection process, and eliminated possible random samples. That is, the sample composition was not left entirely to chance. Despite this limitation, the technique kept travel costs and other logistic problems to a minimum because the housing units surveyed were close to one another.

Another possible area of concern relates to the limited treatment of the job-related temporal problems faced by the city's poor. Though the wider conceptual framework of the study acknowledges that distance separation of home and work

interrelates with changes in households and employment activities to pose spatial and temporal constraints on the city's poor, the empirical analysis focuses more on the spatial constraints and pays little attention to the temporal aspects of the problem. The time restrictions faced by the city's poor including the temporal mismatch between such activities as day-care timing and job timing might be a useful area for future research. As Janelle (1993, 103) points out, "In the social geography of cities, minutes count: the need to mesh individual life with time demands of social and economic obligations helps establish the temporal ordering of life in Canadian cities."

The use of ethnographic methods including participant-observation and detailed interview of specific respondents (as done by Dyck, 1989, in Vancouver) will allow for a better probing of the organization of daily routines and the identification of time constraints facing respondents in the Edmonton labour market. Also respondents may be encouraged to keep a detailed diary (at least for few days) and provide information on weekly scheduling to help ascertain the spatial and temporal range of their daily activities.

This study has investigated the spatial constraints on employment activities from the perspective of low income people in Edmonton. A useful follow-up would be research into related difficulties from the perspective of the employer. More research, presumably, a case-by-case study of individual

firms is needed to shed more light on the locational decision strategies of various employers in the city. There is also the need for policy-relevant research to determine the level and direction of intra-urban labour mobility in Edmonton, paying special attention to the low-income population. Further research is needed to enable us to understand more fully the conditions of single-mother households living in poverty, and to identify the types of policies and actions required to reverse the growing "feminization of poverty" in the city.

It is high time we became more forthright about the apparent persistence of poverty and unemployment amongst racial minorities, especially Aboriginals, in the city. Due to mounting poverty, many Aboriginals are leaving their reserves and rural communities to move to Edmonton and other urban centers, putting enormous pressure on the already inadequate urban social facilities. In the provinces of Saskatchewan and Manitoba, Aboriginal leaders, in conjunction with city planners, have established urban reserve districts--A form of Aboriginal self-government within city limits (The Edmonton Journal, Monday, May 25, 1992:A8). The city of Edmonton can benefit immensely from the Saskatchewan and Manitoba experiences by carefully studying the merits and demerits of this new urban development concept.

Data collecting agencies in the city (e.g., the city's Transportation and Planning departments, and social service agencies) should pay more attention to the geographic

relevance of their data. A major problem encountered in this study relates to mismatches between geographic boundaries specified by various departments and agencies in the city. Indeed, some agencies (like the Food Bank) do not disaggregate their data on any geographic basis.

Furthermore, we need to develop better models and concepts that recognize the changing needs of the urban poor, and to intensify the academic discourse on explaining and solving the problems of urban poverty. These are formidable research problems but we owe the urban poor the efforts involved.

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APPENDIX 1

Statistical Techniques

The greater part of the primary data was information based on categorical variables--nominal data. Consequently, much emphasis was placed on non-parametric statistical methods--more specifically, the Chi-Square test and Cramer's V. While the Chi-square technique usually provides information on the significance of an association between two variables, the Cramer's V measures the strength of the association. Being bivariate tools, both the Chi-square and Cramer's V are inadequate in establishing the relationships between more than two variables. They are also deficient in providing insights into the directions of association between variables; and fall short of determining the relative importance of explanatory variables. The technique of Multiple Regression was employed to address these inadequacies.

i) The Chi-Square test: The technique examines whether or not frequencies which have been empirically observed differ significantly from those which would be expected under certain theoretical assumptions. Being non-parametric, the Chi-square does not require strict assumptions of normal distribution of data, or homogeneity of variance (Matthews 1981, 94). However, the proper use of the Chi-square test is subject to three main assumptions. First, the samples for the test should be randomly and independently selected. Second, the categories must be both mutually exclusive and exhaustive. Finally,

expected frequency in each cell should not be less than five (Norcliffe 1982, 98).

The estimation of the Chi-square (X^2) is:

$$X^2=\sum_{i=1}^{k}\sum_{j=1}^{l}\frac{(O_{ij}-E_{ij})^2}{E_{ij}}$$

Where, k = the total number of categories

l = the total number of samples

O_{ij} = the observed frequency in category i and sample j

E_{ij} = the expected frequency in category i and sample j (Norcliffe 1982, 98).

The CROSSTABS procedure in SPSS displays the Chi-square values under "Statistic 1".

ii) Cramer's V: This is a Chi-square-based measure. It falls under a more general statistical method known as the "correlation of attributes" since the categories into which observations are placed may be considered as attributes. Cramer's V takes the value of zero when there is no association, and unity in the case of perfect association. It does not take negative values (Norusis 1982, 29; Liebetrau 1983, 15).

Cramer's V is estimated as follows:

Where k is the smaller of the number of rows and columns, and

$$V=\sqrt{\frac{X^2}{N(k-1)}}$$

N represents the sample size (Norusis 1982, 29). The CROSSTABS procedure in SPSS displays the Cramer's V under "Statistics 2".

iii) The Technique of Multiple Regression: The tool of multiple regression has a wide range of applications in social sciences. Among other things, it can be employed to identify the subset of independent variables that are most useful for predicting a dependent variable. The relative importance of independent variables in explaining a dependent variable can also be assessed through a multiple regression analysis (Norusis 1985, 9; Jaccard, Turris, and Wan 1990, 7). The procedure requires that each case has values for both the dependent and independent variables. Furthermore, the tool of multiple regression assumes that the dependent and independent variables, particularly the former, are measured on an interval scale. Binary variables satisfy this requirement (Norusis 1985, 9; Lewis-Beck 1980, 66-67). The multiple regression technique takes up the linear model of the form:

$$Y=\alpha+\beta_1X_1+\beta_2X_2\ldots+\beta_nX_n+e$$

Where, Y = dependent variable

α = intercept on the y-axis (constant)

ß = slope

X = independent variables

e = error term

The model takes the functional form:

$$Y = f(\alpha + ß_1X_1 + ß_2X_2 \ldots ß_nX_n) + e$$

iv) Index of Dissimilarity (Id): This is one of the indices used to measure the levels of dissimilarities (or segregation) among two groups. It was developed by Duncan and Duncan (1955). The index (Id) ranges between 0 and 100; 0 indicates a perfectly similar distribution, 100 indicates a perfectly dissimilar distribution. The Id represents the proportion of a sample that would have to be moved to a different category to make the distributions identical. The index is similar to the Location Quotient which shows the relative concentration of a population within any one sub-area. The Id has had a wide range of applications. For instance, Prevosti et al. (1975) have used the index of dissimilarty to measure the genetic distances between plants; and Carlyle (1991) has used the index to examine the ethnicity and social areas within Winnipeg.

The Index of dissimilarity (Id) is estimates as follows:

$$Id = \frac{1}{2}\sum_{i=1}^{k} |X_i - Y_i|$$

Where, X_i= The percentage of sample X in the ith sub-unit or

category.

Y_i= The percentage of sample Y in the ith sub-unit or category. The summation is given over all the k sub-units making up the given variable.

APPENDIX 2

QUESTIONNAIRE

Dated: October 1, 1991

To : All Participants--A survey on "The Spatial Constraints on the Employment Opportunities of Low-income people in Edmonton".

From: Joseph Mensah (Graduate Student)
Department of Geography, University of Alberta
Edmonton, Alberta, T6G 2H4.

I am very pleased that you have agreed to participate in this survey. The purpose is to help examine some of the difficulties relating to journey-to-work and job search, access to reliable personal or public transportation system, and access to job information in the city of Edmonton. Respondents' views on poverty and unemployment are sought as well.

Responses gathered are intended for the writing of a Ph.D dissertation at the Department of Geography, University of Alberta--where all returned questionnaires would be kept and analyzed. Be assured that your responses will be treated with strict confidentiality. In fact, the results will be reported in such a way that individual respondents can never be identified.

Please note that there is nothing like right or wrong answers in this exercise; I am only interested in opinions. Your input is certainly very important. If you have any questions regarding the survey, do not hesitate to call me at 435-9916.

Thank you for your participation.

Place of interview: 1-North 3-West

2-South 4-Central

Section 1a: Employment characteristics and spatial constraints:

SOME QUESTIONS ABOUT YOUR EMPLOYMENT BACKGROUND

1) What is your present employment status?

(1) Employed full-time

(2) Part time/Casual

(3) Retired

(4) Unable to work

(6) Unemployed (**GO TO SECTION 1b**)

(7) Others, specify.....

(0) No Response (NR)

FOR THOSE EMPLOYED (FULL-TIME, PART-TIME & CASUAL).

2) If you are employed, what is the general location of your work place? (e.g. Downtown, Westend, North, East, Southside).

1 - Downtown

2 - West/Westend

3 - North

4 - East/Eastend

5 - Southside

6 - Other areas

0 - NR

9 - NA

3) If you are employed, what type of job do you hold?

4) What is the approximate distance from your home to your workplace?

5) How long, on the average, does it take you to get to work?

6) What mode of transportation do you normally use to get to work?

01) Walk

02) Bus and/or train (LRT)

03) Bicycle

04) Own car/truck

05) Car pool/Ride

06) Taxi

07) Motorbike

08) Others, Specify.....

7) If you rely basically on public transport, why do you do so? 8) What problems, if any, do you face in travelling to and from work or preparing to go to work?

9) Approximately how much per month, do you spend on transportation to and from work? $..

10) Approximately how much per month, if any, do you spend on parking at or near your employment location? $.....

11) Does the level of crime in this city in any way affect your journey to work?

1- Yes

2- No

3- Don't Know

12) Please indicate how much satisfaction you get from your present job.

Very Dissatisfied				Very Satisfied	Dk	NR	NA
1	2	3	4	5	6	0	9

13) Have you used any social contact (friend, family, relative, neighbours, or social organization) to secure a job within the last two years or so?

1) Yes
2) No
3) Can't recall
9) NA

13b) If yes, specify:
1- Friend
2- Relative/Family
3- Neighbour
4- Social organization
5- Other
0- NR
9- NA

SECTION 1b: FOR THOSE UNEMPLOYED AND LOOKING FOR JOB.

(ASK IF UNEMPLOYED, OTHERWISE GO TO SECTION 2)

1) If unemployed, why are you not working? (Circle at most 3)

01) Cannot find job	02) Laid off
03) Inadequate education	04) Returning to school
05) Health problems	06) Family responsibilities
07) Transportation problems	08) Lack of skills
09) Other, specify:	99) NA

2) If you are unemployed, for how many months within the last 12 months have you been out of work?

1- Less than 4 months

2- 4 to 8 months

3- Over 8 months

9- NA

3) What job did you hold before becoming unemployed? (Please indicate whether the job was part time or full time)

Job .....(Part time, full time,)

4) How many times, if any, have you been laid off within the last 12 months?

1 - Once

2 - Twice

3 - Thrice

4 - More than 3X

9 - NA

5) What mode of transportation did you rely on while you were working?

01 - Walk

02 - Bus/LRT

03 - Bicycle

04 - Own car/truck

05 - Car pool/Ride

06 - Taxi

07 - Motorbike

08 - Others

99 - NA

6) How much on the average, did you spend per month on your journey to work while you were working?

1--$1 TO $20

2--21 TO 40

3--41 TO 60

4--61 TO 80 0--NR

5--OVER $80 9--NA

7) Are you currently looking for job?

1 - Yes

2 - No

9 - NA

8) If no , why? 1 - Health problems

2 - Family/child care responsibilities

3 - Transportation problems

4 - Schooling/Job training

5 - Other reasons

9 - NA

9) If you are looking for work, do you have in mind some minimum wage or salary?

1 - Yes

2 - No

9 - NA

10) If so, what is the minimum hourly rate or weekly wage you are looking for?

1- Less than $6/hr.

2- $6-$10/hr.

3- Over $10/hr

9- NA

11a) Would you prefer a full time job, if one were available?

1 - Yes

2 - No

3 - Don't Know Dk

9 - NA

11b) If no, why?

1 - Health problems

2 - Family/Childcare responsibilities

3 - Transportation problems

4 - Schooling/Job training

5 - Other reasons.....

9 - NA

12) How do you normally obtain information about job vacancies? 1) Newspapers

2) Employment & Placement offices

3) Social contacts (friends, relatives, neighbours, social organizations)

4) Newspapers and Employment & Placement offices

5) Employment & Placement offices and social contacts

6) Others, specify:.....

9 -NA

13) Do you have any relative, friend, neighbour or any organization which is assisting you in your job search

1 - Yes

2 - No

9 - NA

3b) if yes, indicate the source and type of assistance

Sources 1) Friend

2) Relative/Family

3) Neighbour

4) Social organization

5) Other, specify:.....

9 - NA

Type of Assistance?

1 - Gives ride

2 - Financial support

3 - Provide job information

4 - Resume and interview preparation

5 - Other, Specify.....

9 - NA

14) Have you learnt about any job vacancy through a social contact (friend, relative, family, neighbour, social organization) over the last year or so?

1-Yes

2-No

3-Can't recall

9-NA

15) If you are looking for job, what mode of transportation do you use most often for your job search?

16) If you are looking for work, approximately how many hours per week do you devote for job search?

17) How much money per week (if any) do you spend on transportation in searching for job?

18) Are you prepared to accept a job offer in any part of the city?

1) Yes

2) No

9) NA

19a) Are there specific places/neighbourhoods in the city where you are not willing to accept jobs?

1) Yes

2) No

9) NA

19b) If yes, where and why?

20a) Are there specific place(s) or neighbourhood(s) where you prefer to work?

1) Yes

2) No

3) Don't know

9) NA

20b) If yes, where and why?

21) Would you say you know this city well enough to undertake good job search and follow up job applications, if necessary?

1) Yes

2) No

9) NA

22a) Would you say you have enough time to conduct your job search each week?

1) Yes

2) No

9) NA

23b) If no, please elaborate:

24) What would you say are the 3 basic problems (if any) in searching for job here? (Please rank them)

1st

2nd

3rd

25) If you are looking for job, how do you assess your chances of getting one in the next three months?

1) Very good

2) Good

3) Fair

4) Poor

5) Don't know

6) Other

9) NA

26) Have you been compelled, within the last 12 months, to quit or turn down a job offer because of (anticipated) distance or transportation problems?

1) Yes

2) No

9) NA

27) If yes, please elaborate:.....

28) Does the level of crime in the city in any way affect your job search?

1) Yes

2) No

3) Don't know

9) NA

29) If yes, please elaborate:

30) Within the last 12 months, have you moved to a new neighbourhood in the city to find job?

1) Yes

2) No

9) NA

31) Are you currently involved in any job training/upgrading program?

1) Yes

2) No

9) NA

32) If yes, specify the type, agency (i.e., government or private) and location:

Type:

Agency:

33) If yes, what would you say are the main problems that you face in this program, (if any)? .

Section 2: Views & Perceptions on Poverty/Unemployment & Spatial Constraints.

NOW YOUR VIEW ON POVERTY, UNEMPLOYMENT AND TRANSPORTATION FACILITIES IN EDMONTON

On a scale of 1 to 5, indicate your satisfaction or otherwise on the following items? [Scale:

1 = Strongly Dissatisfied;

2 = Dissatisfied;

3 = Neutral;

4 = Satisfied;

5 = Very Satisfied

6 = Don't know

0 = NR

9 = NA

1) Public transit system in the entire city.

Very Dissatisfied Very Satisfied Don't Know

1 2 3 4 5 6

2) Public transit facilities in your neighbourhood of residence

Very Dissatisfied Very Satisfied Don't Know

1 2 3 4 5 6

3) Transportation facilities (bus and LRT) to your employment site (if employed).

Very Dissatisfied Very Satisfied Don't Know

1 2 3 4 5 6

4) Crime levels in the entire city.

Very Dissatisfied					Very Satisfied	Don't Know
1	2	3	4	5		6

5) Crime levels in your neighbourhood of residence.

Very Dissatisfied					Very Satisfied	Don't know
1	2	3	4	5		6

6) Job opportunities in the entire city.

Very Dissatisfied					Very Satisfied	Don't Know
1	2	3	4	5		6

7) Job opportunities in your neighbourhood of residence

Very Dissatisfied					Very Satisfied	Don't Know
1	2	3	4	5		6

8) In your view why are so many people on welfare in Edmonton?

9) In your view why do some people not find work?

10) In your view why is unemployment high?

11) Do you think the government should be responsible for providing work to those unemployed who wish to work?

1) Yes

2) No

3) Don't know

9) NA

12) What do you think should be done if the number of people

on welfare is to be reduced?

Section 3: Personal and Household characteristics:

SOME QUESTIONS ABOUT YOUR HOUSEHOLD CHARACTERISTICS AND INCOME

1) What is your age :

(1) Under 20 years

(2) 20 - 34 years

(3) 35 - 49 years

(4) 50 - 64 years

(5) 65 and over.

0-NR

2) What is your sex:

(1) Male

(2) Female

(0) NR

3) Marital Status

(1) Single

(2) Married

(3) Divorce

(4) Separated

(5) Widowed

(6) Common-law/Live-in partner

4) Apart from yourself, how many persons are in this household?

1) Preschool (under 5) =

2) Children 5-yes =

3) Adults (18+) =

4) Total =

5) Apart from yourself, how many persons in this household are employed?

6) How many years of formal education, if any, do you have?

7) Do you belong to any social or religious organization?

1) Yes

2) No

7b) If yes, specify:

8) What is the highest level of education that you completed?

01) No formal education

02) Less than Grade 9

03) Grade 9-12 without certificate

04) Grade 9-12, with certificate

05) Trade certificate or diploma

06) Other non-university education

07) College or University without degree

08) College or university with degree

09) Other, specify:

9) Why did you stop at that level? (Indicate at most 3 reasons).

1) Lack of money

2) Family responsibilities

3) Parents'or personal wish

4) Health problems

5) Transportation problems/School was too far

6) To start work

7) Other, specify:

9) NA

10) Do you own any means of transportation?

1) Yes

2) No

11) If yes, indicate the type and present condition (in terms of road worthiness):

Type: 1) Bicycle

2) Motorbike

3) Car/Truck

4) Other

9) NA

Condition: 1-Very good

2-Good

3-Fair

4-Poor

5-Don't know

9-NA

12) Are you currently receiving assistance from any community-based social agency (e.g. Food bank)?

1) Yes

2) No

13) Please indicate the amount of income derived from these sources? (Indicate all applicable sources).

Sources and Amount per month.

01) Wage/Salary = $

02) Income from self employment = $

03) Income subsidy (rent, child care, health care) = $

04) Alimony/Child support = $

05) Family Allowance = $

06) Social welfare benefit = $

07) Government income (Veteran's Allowance, workman's compensation = $

08) From family/Friends = $

09) Unemployment benefit/Insurance = $

10) Other, specify: = $

14) Please indicate which of the income categories below is closest to the total income of all members of your household for the past year (before tax).

01) Under $5,000	02) 5,000 - 9,999
03) 10,000 - 14,999	04) 15,000 - 19,999
05) 20,000 - 24,999	06) 25,000 - 29,999
07) 30,000 - 34,999	08) 35,000 - 39,999
09) 40,000 - 49,999	10) 50,000 and over

15) Which of the above income categories comes closest to your (personal) income for the past year, before tax?

16) How would you describe your ethnic identity?

APPENDIX 3

THE SELECTED HOUSING PROJECTS

NAME OF PROJECT	CODE*	# OF UNITS	ADDRESS
Northwest Cluster			
1) Lorelei (VI)	328	40	16113-103 Str.
2) Dunluce (IV)	348	52	#1, 11930-162 Ave.
3) Caernarvon (I)	305	38	#1, 14825-118 St.
4) Carslisle (II)	363	48	12104-117 St.
5) Carslisle (I)	364	39	14004-117 St.
Cluster total		217	
West Cluster			
1) Belmead (III)	334	55	18184-93 Ave.
2) Primmore (I)	356	69	#1, 9606-180 St.
3) Lymburn (I)	344	49	7403-180 St.
4) Ormsby Place (II)	342	61	6216-180 St.
Cluster total		234	
Central Cluster			
1) P.M.Q. Kingsway	502	50	11702-114 Ave
2) McCauley	368	39	95st.-108 Ave.
3) New Delton (II)	104	14	12803-68 Ave.
4) New Delton (I)	101	36	7103-129 Ave.
5) Balwin	102	46	6615-131 Ave.
Cluster total		185	
Southwest Cluster			
1) Pretolia	201	70	11503-41 Ave.
2) Yellowbird (III)	360	47	11203-20 Ave.
3) Duggan	201	108	#1, 10512-36 Av.
4) Ermineskin (II)	365	52	10727-24 Ave.
Cluster total		277	

* This represents the code numbers used by the Edmonton Housing Authority to identify the various housing projects.

Source: Edmonton Housing Authority (Unpublished Records).